THE CULTIVATOR:

A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

I KNOW OF NO PURSUIT IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE.—*Wash.*

VOL. V. NO. 3, WASHINGTON-ST. ALBANY, N. Y. AUGUST, 1838. NO. 6.

Conducted by J. BUEL, of Albany.

TERMS.—ONE DOLLAR per annum, to be paid in advance. Subscriptions to commence with a volume.

Special Agents.—L. & R. HILL, Richmond, Va.; BELL & ESTWISLE, Alexandria, D. C.; GIDEON B. SMITH, Baltimore, Md.; JUDAH DOBSON, bookseller, and D. LANDREITH, seedsman, Philadelphia; ISRAEL POST, booksellers, 83 Bowery, ALEX. SMITH, seedsman, P. WAKEMAN, office of the American Institute, Broadway, N. York; E. M. HOVEY, Merchants's Row, Boston; ALEX. WALSH, Lansingburgh, and WM. THORBURN, Albany, gratuitous agents. For general list of agents see No. 12, vol. iv.

The Cultivator is subject to common newspaper postage.

☞ Price of the published volumes, 50 cents per vol. stitched—the four volumes bound together, $2.75—bounded in two volumes, $3—the four vols bound each separate, $3.25.

THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

The Crops.

We do not remember any season in which the crops are so generally promising as in the present.—At the time of writing, July 2, the remark applies to every description of crop, and to every section of the union, so far as we have observed, and have been able to learn. The wheat crop has, however, two formidable enemies to encounter this month—the grain worm and the rust. The former was seen in our fields for the first on the 24th of June. It might probably have appeared as early as the 20th June; and the last time we were able to discover it was on the 20th of July—when spring wheat, sown on the 16th May, had been a few days in head. ☞ We shall be obliged to any gentleman who has watched this insect, to apprise us of the times at which it appeared and disappeared.

During a jaunt of 200 miles into Vermont, in the last of June, we were gratified at the highly auspicious promise of the crops; and not a little surprised to find the corn, from Bennington to Rutland, in a better and rather more forward state than it was in the upper valley of the Hudson. This we ascribe to early planting, early variety, and the use of long manure. On the 19th of June we saw part of a field in tassel, at Wallingford. We planted some of the same kind on the 24th, and expect to see it come to maturity this season.

Common School Libraries.

We were unadvised of the fact, until we saw it announced in a late *Jeffersonian*, that the legislature made an appropriation at its last session, of $45,000 per annum, for three years, for the establishment of common school libraries. We fully concur in the sentiments expressed in the following extract which we make from the Jeffersonian, as to the salutary influence which this judicious appropriation is likely to have in enlarging the sphere of useful knowledge, and in improving the condition of the producing classes of the community.

"We trust no friend of the great cause of universal education, no parent, no youth, no lover of his country, has forgotten or will forget the provision so wisely made by our last legislature for the establishment and support of COMMON SCHOOL LIBRARIES. We feel a proud satisfaction in contemplating the fact that New-York stands forth in this matter a pioneer and a glorious example to her sister states. The law making provision for the distribution of the annual revenue of the new common school fund, (arising from the deposite of the late surplus revenue with the states,) appropriates forty-five thousand dollars a year exclusively to this beneficent purpose. Each district in the state is entitled to draw its share of this fund, proportioned to the number of its scholars; and, estimating the whole number of districts at forty-five hundred, this sum would allow an average of ten dollars to each district, or thirty dollars in the course of the three years' duration of the law. We believe this estimate is rather under than above the truth; and that, with a very moderate display of public spirit on the part of the people, a very comprehensive and most useful library may be immediately secured to every school district in the state.

"The great advantages of this noble enterprise to that very large proportion of our citizens who are unable to buy large collections of books cannot be over-estimated. Not alone to children and youth will its benefits be dispensed. Parents and others of mature years can readily avail themselves of the fund of useful and instructive reading which is thus brought to their doors. Even should the library consist of but fifty volumes at first, each family in the district may draw one volume from it per week for the whole year, returning it at the week's end for another; and thus enjoying a supply of information and entertainment for the whole period without the cost of a cent. At the end of the year, a new instalment of the appropriation will be doubled, and another year's reading commenced. We firmly believe that in this way the library will be found a great auxiliary to the school, by creating a new interest in its management and its welfare. Should the district conclude to have a little gathering every Saturday evening, or some other evening, to exchange books, or return and draw again, a lyceum, or association for mutual improvement, would soon grow out of it, and still greater benefits be realized. Each parent and scholar would feel that he had a personal interest in the library as well as the school; and thousands would spend their leisure hours in reading, which would otherwise be given, almost of necessity, to frivolous if not corrupting amusements."

Thus far our quotation. But we are not prepared to go farther with the Jeffersonian—in its approbation of the selection of books designated and recommended as the *basis* of common school libraries. The Messrs. Harpers, to whom we accord great credit for their enterprize and industry, have printed, we are told, under the direction of the American Society for the diffusion of useful knowledge, a series of 50 handsome volumes, of uniform size and appearance, to be comprised in a neat case, and furnished at twenty dollars. These books, of which a list is given in the Jeffersonian, treat mostly of foreigners, foreign lands, and of matters foreign to the great pursuits of our country. They are the lives of Bonaparte, Alexander the great, Peter the great, Oliver Cromwell, of celebrated travellers and female sovereigns; ancient and modern Europe, the Holy Land, the Crusades, Arabia, the Chinese, voyages, travels, &c. We see but eight volumes that seem from their title to relate particularly to our continent, and but about the same number that are written by Americans. But we do not recognize one, among these books—which are designed almost exclusively for an agricultural community—we do not recognize a single volume on agricultural chemistry, or on agricultural botany, or on agricultural geology—or on the mechanics of agriculture, the great modern lever which simplifies, abridges, and at the same time augments the products and profits of human labor; we see nothing on the veterinary art, or the management of cattle—nothing upon practical agriculture or horticulture—and little, if any thing, upon the moral, relative and political duties of life. The studies to which we have last alluded, ought to form the foundation, the basis, of a rural education; those selected might become auxiliary, or supplemental; or, the two classes might be blended like brick and mortar in the walls of a building, to give beauty, as well as solidity, to the structure.

It needs no argument of ours to convince any reasonable man, that the proper study of youth, is the business which is to employ them in manhood. Thus we give to the law student elementary books in the business which is to constitute his living; and to students in divinity and physic, the elementary books suited to their several professions; and we require a four years' study in these elementary works, in order that the student may fully understand the principles upon which he is to preach or practice, before we permit him to put on the toga of manhood, and to take rank with his profession. And shall not the student of agriculture, whose business embraces a wider range of useful science than either of the before mentioned classes, be permitted, during his minority, to study the elementary principles of *his* profession?—to store his mind with the precepts and practices of eminent men in that profession? We say, lay the *foundation* in usefulness—in that knowledge which will tend to make intelligent, useful and contented farmers, and good citizens, of the boys of our common schools. You may then build whatever superstructure you please upon this solid foundation, and embellish it to your taste.

But we are reminded, that we are treading on hallowed ground; that the society for the promotion of useful knowledge, with Gov. Marcy at its head, have sanctioned the selection that has been made, and, as if to silence every doubt, that Gen. Dix, superintendent of common schools, has also given it his approbation. Without wishing to derogate in the least, from the high character of the gentlemen who constitute the society, or to depreciate their efforts to do good, we must be permitted to doubt their pre-eminent qualifications for selecting a suitable library for an agricultural community. Most of the gentlemen we believe, belong to the learned professions, or to the mercantile class; and we are willing to award to them a high standing in literature and general science; yet few of them, we apprehend, know much of the practice or theory of farming, a business which stands first on the roll of usefulness, and which it is the interest of every class of the community to enlighten and improve; and they are therefore not exactly best qualified to promote this great object of national prosperity, be their intentions ever so patriotic. Or at least so we are obliged to infer, from the catalogue of books which have been published. And as for our highly respected secretary of state, he is no doubt well qualified to select a law or literary library, or to thread the mazes of politics—yet we should not venture to trust him, with all his qualifications, to select *our* library, or manage *our* farm. Would these gentlemen trust an association of farmers, however intelligent, to select their *professional* libraries? We think not.

But perhaps we are going too far: something on agriculture is promised in the next series, and we ardently hope it will be furnished.

After all, it may be said, and will be said, and by thousands of farmers too, that agriculture wants no auxiliary aids; that it has done well enough, heretofore, without the aid of books or of science—and that it can continue to do so. How would such a remark apply to the other arts of labor? Look at the cotton factory for instance—a yard of cotton goods may now be purchased for half the price which was paid for barely *weaving* a yard thirty years ago. The manipulations in most of the other arts have been so abridged by machinery, and the processes so simplified by science, that the fabrics produced by these labors are greatly lessened in price. In these arts, the improvements of the age are speedily registered and promulgated in books and periodicals. Mechanics and manufacturers know how to appreciate this sort of book knowledge; and it enables them to keep pace with the improvements of the age. Not so our farmers generally. They have little intercourse with each other; they have no access to agricultural books, and many are too old or too prejudiced to seek for or receive information. The consequence is, that we are making slow progress in agricultural improvement, while agriculture is being made to double, treble and quadruple its products upon the old continent. Youth is the appointed time, and the only time that can be relied on, for implanting the knowledge and the principles which should guide and govern in the business of manhood—and of laying the foundation for good citizens and intelligent prosperous farmers.

The Strawberry.

As the present month and the beginning of September, is the best season for making strawberry beds, some remarks as to varieties and the mode of culture may not be unacceptable.

The fruit of the strawberry is almost universally esteemed; and is prized as well for its delicious flavor, as for its tendency to promote health, and for its efficacy in mitigating or curing certain diseases.—The berries are almost wholly soluble in the stomach, and neither there or elsewhere do they undergo the acetous fermentation. They dissolve the tartareous incrustations of the teeth. They promote perspiration. When used largely, they have given relief to those afflicted with the gout; and Hoffman states, that he has known consumptive people cured by them. The principal species and varieties are—

1. *Wood*, with oval serrated leaves; the fruit round and small, and white and green. Native of Britain.

2. *Scarlet*, with leaves like the preceding, roundish and scarlet coloured. Native of North America. Varieties: early scarlet, Wilmot's late, common late, Wilmot's scarlet.

3. *Roseberry*. A Scotch seedling. The plants have few roundish leaves, larger fruit than the scarlet, and are very prolific. Continues bearing till August.

4. *Downton*. Fruit large, irregular and coxcomb-like; leaves large; plants hardy; and although prolific in England, has not proved so with us. We have grown a berry that measured 5 3-4 inches.

5. *Carolina*, or *Bostock*.

6. *Musky*, or *Hautboy*; with oval, rough, javellin edged leaves, the fruit large, of a pale red.

7. *Chili*; with large oval, thick hairy leaves and large flowers; the fruit large and very firm. A native of Chili.

8. *Keen's Imperial, or New Chili;* a large showy fruit, of great repute in England, but not so much esteemed here.

9. *Pine;* the leaves small and delicate. There are two sorts, the red and the white, or greenish-tinted, of the most rich flavored fruit. The Methven Castle belongs to this class. South America.

10. *Alpine, or prolific, or monthly;* commonly lasts from June to October; two sorts, white and red.—The Alps.

11. *One leaved;* the pulp of the fruit pink colored. South America.

We received twelve kinds of select fruit from the London Horticultural Society, in 1825; but continue to cultivate in our garden only the Methven and scarlet,—the latter coming in use ten or fourteen days before the former,—both abundantly prolific. Some of our beds are six years old, and they have produced as abundantly this as in any former year. We ascribe this continued productiveness to our pointing in horn shavings annually between the beds, and strewing upon the latter in autumn tan from the morocco leather factory. The Methven is in bearing about two weeks; we have had 47 berries that weighed a pound, many that measured over four, and one that measured five and one-quarter inches in diameter. Our practice is to clean the alleys and beds before the blossoms show, to leave the runners till the fruiting season is over, and after that to take off those that intrude upon the alleys, and to dung and dig these.

The strawberry multiplies rapidly by suckers or stolens, and may be transplanted as soon as the leaves have grown at the joints, although the roots are but imperfectly formed. If planted out in this month, they will give a partial crop the next season, and will be in high perfection the second year.

Mr. Keen, near London, who appropriates acres to the growth of this fruit, recommends that the pine be grown in a light loam, though no kind will grow better in a stiff one. The imperial and scarlets like a similar soil. The hautboys like a light soil. The wood strawberry is generally raised from seed, and the alpine always. The seed is best sown as soon as the fruit ripens; the plants to be set in fruit beds the spring following. Our own experience leads us to recommend, that the pines and scarlets be planted in a loose, rich, and pretty moist soil, our climate being dryer than that of Britain, and the strawberry demanding a great supply of moisture when fruiting.

The mode of planting is generally in beds containing two, three or four rows, with alleys of two feet between them. The soil should be well dug and pulverized, and the situation open and exposed to the sun. The larger growing kinds may have intervals of two feet between the rows, and of 18 inches between the plants in the rows; the smaller growing kinds may be planted closer. Keen cuts the runners three times in a season—we cut them but once, and leave then the new plants that take root in the beds, mostly to grow. His culture may be the most perfect, but ours is attended with the least labor, the cost of which is there trivial to what it is here. Keen plants the pines and hautboys 2 feet by 18 inches apart, and the scarlets 20 by 18 inches. He found among the many different kinds of hautboys, one which had the male blossom on one plant and the female on another; and experience soon taught him, that to render them fruitful, it was necessary to mix the two kinds in his beds, in the proportion of one male to eight females. Mr. Langworthy, of Cincinnati, and Mr. Downing, of Newburgh, think that the male and female blossoms grow on different plants, in other kinds of strawberry; but our limited experience has not enabled us yet to confirm their opinions. The duration of most kinds with Mr. Keen, is three years,—the wood strawberry and alpine, two years. The latter bears fruit the first year after sowing.

The general dependence, in the country, for the strawberry, has been upon those growing wild in the fields; but independent of the fact, that this fruit cannot grow where the farm is well managed, the extra trouble of gathering them in meadows, is more than equivalent to the labor of taking care of them in the garden.

With regard to manures for strawberry beds, such are to be preferred as are cool, and free from the seeds of weeds. Cow manure is preferable to that of horses. Bone dust and horn shavings are excellent, if not applied in too large quantity. A bushel and a half of either should go as far as a load of long dung. For top-dressing the beds in autumn, there is nothing better than tan, that from the morocco leather factory being preferable. The tan smothers weeds, keeps the soil moist, the berries clean, and seems, withal, to afford the specific food of the plant. It is recommended to cover strawberry beds *lightly* with straw, in the spring, and burn it off, which destroys the seeds of weeds, &c. We have been cruelly censured for this recommendation, by one who unwittingly burnt *piles* of straw upon his beds, and consequently destroyed his plants.

On the proper time for cutting Grain.

"When the base of the stem of grain," says M. Biot, "begins to become yellow and dry, if the corn [grain] be then cut down, though the grain is not ripe, it will continue to be nourished at the expense of the green matter [elaborated sap] of the stem, almost, if not quite as well, as if it had remained uncut, and will thus ripen well; while, having been thus cut down early, much loss from shaking is prevented, beside the chance from *lodging* from heavy rain and wind." The editor of the Quarterly adds, "In a *fine season*, farmers cut down when they find the neck of the straw immediately under the ear, free of juice, when twisted round between the finger and thumb; and do not wait until 'the lower part of the stems are yellow and dry,' because they find in such a season the straw *to die from the ear downward*. This fact, we conceive, does not militate against Mr. Biot's *theory*, for as the absorbing power of the ear at the top of the stem is always powerful, it must be the more powerful the nearer the ear approaches maturity, and, of course, the part of the stem nearest the ear should first become dry. In a bad season, on the other hand, the lower part of the stem first becomes yellow and dry, after which, of course, the crop is not allowed to stand; for, in such a season, the ear never becomes mature, having, of course, less absorbtive power, whilst the vitality of the root is early destroyed by the combined effects of bad weather, and ungenial state of the soil."

On Smut in Wheat.

The Quarterly Journal of Agriculture contains some lengthy and well written numbers on the diseases of grain, by Mr. John Donaldson—in which he notices the different theories which have had their day, and the different preventives which have been recommended; and finally gives us his own opinion as to the cause and means of preventing these evils. We design hereafter to take a more extended view of these interesting communications; but our present object is merely to state the result of some experiments made by the writer, and to notice some of the means of preventing smut in grain, which he considers the most approved.

It is well to premise, that Mr. D. considers smut a parasitic plant, and that it is contagious, or in other words, that smut-powder abounds in minute seeds, capable of germinating and producing its like, when sown with wheat. To destroy the vitality of this smut seed, salt, lime, chamber ley, copperas, arsenic, &c. &c. used in steeps, have been employed, and proved more or less effectual. We select from the different receipts, two, on account of the facility with which they may be employed by farmers generally. One is, "a solution of common salt in water, strong enough to carry an egg, sometimes mixed with nitre and copperas, in which the wheat is steeped, the light grain being carefully skimmed off, and dried with quick-lime and then sown. In Norfolk, the salt is dissolved in a small quantity of water, barely sufficient for the purpose; the lime is slaked with this solution, and the wheat is dried with it in its hottest state, having been previously moistened with pure water." The second, practised in the south of Scotland and north of England, is, to steep the seed in stale urine, free of any mixture. In a practice of this mode of prevention, for forty years, Messrs. Culleys never had any smut. A tub holding a bushel of wheat, with a tin bottom pierced with holes, is immersed in the tub containing the urine, and after the wheat is repeatedly stirred, and the light grains skimmed off, it is thrown on a clean floor, encrusted with lime, and immediately sown. A short time only must elapse between this preparation and the sowing, as the corrosive quality of the volatile alkali with which the stale urine abounds, will destroy the vegetative power of the seed, especially if quick-lime be added."

Mr. D. gives the results of 16 experiments, made with wheat, variously prepared, and without preparation. Seed sown without any preparation, produced but one smutted ear in 434; but impregnated with smut-powder, two-thirds of the ears were smutted. Impregnated with smut-powder, and then washed in urine, the product was one smutted ear in five; and when lime was added to the washed grain, the proportion of smutted was only one to 11½. The four next experiments were made with grain impregnated with smut-powder, and arsenic, vitriol and copperas employed to purify it; and the results were, in the order named above, 1 to 14, 1 to 4, 1 to 16, and 2 to 1. Impregnated with chamber-ley and limed, the smutted ears were only in proportion of 1 to 47. This was far the most favorable result, though salt was not used in any of the experiments.

Arthur Young made several series of experiments with steeps, which are detailed in his Farmers' Calendar. Fourteen parcels were sown on adjoining beds. We give below the preparation and results.

No.	*Preparation.*	*No. of smutty ears.*
1,	Sown dry; nothing done to it,	377
2,	Washed well in clean water,	325
3,	Washed in lime water,	43
4,	Washed in a ley of wood ashes,	31
5,	Washed in an arsenic and salt mixture,	28
6,	Steeped in lime water 4 hours,	12
7,	do in the ley 4 hours,	3
8,	do in the arsenic steep 4 hours,	1
9,	do in lime water 12 hours,	6
10,	do in the ley 12 hours,	0
11,	do in the arsenic steep 12 hours,	4
12,	do in the lime water 24 hours,	0
13,	do in the lye 24 hours,	0
14,	do in the arsenic 24 hours,	5

It would seem from the preceding results, 1, that steeping in lime water, or the ley of wood ashes, are either of them a pretty sure preventive of smut—if, in the second place, the grain is continued in the steep 12, or rather 24 hours. Every farmer has access to one or the other, or both of these, without much expense; and if, as we believe, they are, as well as salt and lime, destructive to the seeds of the smut, there is no excuse for omitting to employ them, or for marketing smutty wheat. It is, however, to be borne in mind, that when smutty wheat has been brought to the barn, unless great care is taken, it is likely to effect somewhat the coming crop, notwithstanding the seed may have been steeped; the seed of the smut being so minute and subtle as to adhere to bags, shovels, the floor, &c. and often to come in contact with the seed after it has been prepared. If wheat is made to follow after a crop of smutty wheat, a practice which should not be tolerated under any circumstance, the new crop will inevitably be smutty, as much of the smut seed will be scattered upon the soil, and will, of course, come in contact with the mouths of the young grain. But it is believed that the smut seeds lose their vitality, and will not grow after the first year; and that hence, if the seed is two years old when sown, the product will not be smutty.

Available Means of Agricultural Improvement.

Societies and premiums were tried in vain in Germany, to renovate agriculture, says Mr. Fleischman, and so was theoretical farming. "The practical farmer, uneducated and full of prejudice," he says, "was not able to understand the principles of the new system; the man of scientific education had no experience and knowledge of applying science to practice properly;" and so both failed, or improved slowly. At last, agricultural schools were established, and the science and practice were taught simultaneously. "In six years," he continues, "the influence of these schools was felt throughout the whole country." Rotation of crops was introduced; the stock was increased and improved; the fertility of the land was renovated; prejudiced neighbors became convinced; they began to imitate, to read, and to think, and in a short space of time, the old system was abandoned, and the farmer soon saw and realized the advantages of the *science* of agriculture."

"I look to the establishment of agricultural schools," says our highly intelligent Otsego correspondent, "as belonging to an earlier state of things than agricultural exhibitions. To him who has made no advance," he adds with great truth, "an agricultural exhibition is a source of mortification and a wounding of self-love—[because it throws his own labors and skill into the back ground]—but a school will awaken the spirit of improvement; and a few young men going forth from such an establishment, will be like a little leaven in the inert mass."

It requires but little reflection and foresight to predict, with great certainty, that unless something is speedily done, by the people and the people's representatives, to improve the state of our agriculture, the farmers of Europe will soon supplant—will undersell us—in our own markets, in the products of our soil. We already find the bread-stuffs of Europe, and even of Asia, put in requisition to feed our population. From the low price of labor in Europe, and particularly from the recent improvements in agriculture, which are doubling and trebling the products of agricultural labor there, the disparity in the actual cost, to the cultivator of these products, is constantly increasing against us. The venerable Fellenburgh—and may he yet enjoy a long and happy life—was the first to demonstrate the utility of combining the science with the practice of agriculture—of making farmers gentlemen, and gentlemen farmers—of combining intellectual with physical power, and literature with labor—in a school for the education of young men. The sagacious Frederick, king of Prussia, soon saw the advantages to the state, which were likely to result from schools like that at Hoffwyl, and soon established the great school at Moegelin, under the distinguished Thaer, and has since incorporated its principles into the common schools of his kingdom. Bavaria, Austria, and other of the German states, and France, have since established like schools; Russia has agricultural schools near St. Petersburgh

and Moscow, liberally endowed and supported by the government; and even Ireland, it will be seen by the extracts in our last, has started in this noble career of usefulness. The United States, which should be foremost in efforts to enlighten, improve and elevate the agricultural population, will, we fear, be last to establish agricultural schools, and the last to profit by their usefulness.

The only present available means of accelerating the introduction of these schools among us—for established they ultimately must and will be—is the agricultural press—the enlarged circulation of agricultural periodicals among the people. We have now about twenty of these in our country. They are every day increasing the sphere of their usefulness, and the extent of their circulation. They are bringing into notice the best practices in husbandry, and promulgating the principles of agricultural science. They are producing a salutary change in the public mind, in regard to the importance of improving our husbandry; and this change will ere long, we trust, be felt and manifested in our halls of legislation. The sooner the better, for all classes of our citizens.

Utility of Agricultural Societies.

A national society, for promoting agricultural improvement, was about being organized at our last dates, in Great Britain, through the active influence of Earl Spencer, the Duke of Richmond, and other distinguished landholders. There already exists a Central Society of Agriculture, which may in some measure be termed a national institution. The rapid improvement of Scotch husbandry, under the invigorating influence of the Highland Agricultural Society, is operating as a powerful stimulus to the formation of a similar society in England. The Editor of the (London) Farmers' Magazine, speaks thus of the matter:—

"Attention is at length aroused," says the editor, "to the remarkable progress which agriculture has made in Scotland, and to the high rents cheerfully paid by the tenants there, although laboring under the disadvantage of a more inhospitable climate. That the Scotch are better farmers than the English generally, that they pay higher rents, and that their system of farming is improving daily, are facts at last unequivocally, though reluctantly admitted; and the question is very naturally asked, how has this been effected? How is it that our northern brethren, laboring under acknowledged disadvantages, have beaten us in the race? The answer is, by reducing the practice of, and improvements effected by, the most talented and skilful agriculturists, to writing, thereby establishing agriculture as a *science*, and again diffusing such information speedily and widely amongst the farmers. The effective attainment of both objects may be mainly, if not altogether, ascribed to the exertions of the Highland Agricultural Society. We have been always so deeply impressed with the high value of this society, that we have never failed to hold it up as a model to all other agricultural societies. A like opinion of its utility is rapidly spreading, as well as a desire to become better acquainted with the system of management adopted by the Scotch agriculturists."

The editor continues—"An agricultural society has been formed in Paris, which communicates with more than 200 local societies in different parts of France, and has correspondents in every part of the kingdom, besides more than fifty correspondents in almost every part of the world. New local societies are in course of formation daily, ploughing matches are introduced, a steam plough has been invented; and agricultural schools are established in different parts of France. The French possess several experimental farms, and the propriety of establishing agricultural colleges, for the instruction of youth, is strongly urged by the best practical writers of the day. At Petersburgh and Moscow, agricultural colleges are established. In Prussia, the king especially patronizes agriculture, and the academy at Frankfort, upon the estate called Moegelin, under the superintendence of M. Thaer, the most scientific agriculturist in the world, is well known. If we plume ourselves upon our superior knowledge, and regard with indifference the exertions made by our neighbors, we shall by and by discover to our disgrace and shame, and loss, that as in the case of the Scotch agriculturists, we shall have to go abroad for information,"—and, *we* may add, for BREAD!

Sir John Sinclair.

If substantial usefulness to the human family constitutes the criterion of merit—as it should do—few men are entitled to greater praise than this distinguished Scotsman. Many men have the talent to be useful, who lack the disposition. There are others, who have the disposition to be useful, but lack the talent, the means, or the resolution, of carrying out their benevolent wishes. In Sir John Sinclair, the talent, the disposition, the means, and the perseverance, necessary to accomplish great usefulness, were most happily combined, and by him they were most successfully employed. Such a man is a blessing to his country and to mankind. He saw the agriculture of his country, the great source of human subsistence and human comfort, in a wretched condition. He saw, that from the little intercourse the farmers had with other countries and other districts, from which they could draw instruction, that little improvement was to be expected, except through the united exertions of influential individuals, aided by the liberal patronage of the government.

Impressed with these convictions, he printed and circulated, in 1793, his plan for establishing a Board of Agriculture; and in a few days afterwards, he moved, in his place in parliament, an address to the crown, in favor of the proposed establishment, which was carried, 101 to 26, the board organized, and he made president. In a speech which he made while the subject was under discussion in parliament, he pointed out the obvious advantages which would result from the establishment. In the first place, according to his biographer, he regarded it as a general magazine of agricultural knowledge, and a society of reference, to which any question might be sent, connected with the improvement of the country. In the second place he shewed, that by agricultural surveys, carried on under the auspices of such a board, every fact or observation known in that country, connected with the improvement of the soil, or the stock it maintained, would be collected. In the third place, that by establishing an extensive foreign correspondence, the discoveries and improvements appertaining to other lands, would be much sooner and more widely rendered available, than if dependant wholly on private exertion. In the fourth place, that it was only through the means of such a board that any general improvement of stock could be looked for; and that, in the last place, it might be the instrument of obtaining a statistical account of England. Five thousand pounds—$22,000—was the annual grant, and the privilege of franking was given to the board.

The two great primary objects of the board were, to ascertain the general agricultural state of the country, and the means of improving that state. As the most effectual way of accomplishing these objects, agricultural surveys were made; and "in the course of a little more than a year," as stated by a distinguished writer on husbandry, "the board of agriculture had printed a body of authentic facts respecting the agricultural and internal economy of the country, greater than was ever obtained by any other nation since the beginning of time."

But these works, amounting to about eighty volumes, were too voluminous for general use; and the next object of the worthy president was to condense, and bring within the compass of a volume, all the most material facts thus collected, in order to render them available to the practical farmer, and more conducive to general improvement. He laid it down as a maxim in literature, that "knowledge, previous to its being brought into a condensed state, may be compared to a small portion of gold, dispersed throughout a great quantity of ore. In that rude condition, the strongest man cannot sustain its weight, nor convey it to a distance; but when the pure metal is separated from the dross, a child may carry it without difficulty."

In his address to the board, in 1813, he remarked, "that the power and prosperity of a country depend on the diffusion of useful knowledge, can hardly be questioned; *and there is probably no art in regard to which a variety of knowledge is more essentially important, than in the art of agriculture.* The extent of information necessary to bring it to any thing like perfection, is hardly to be credited. To preserve the fertility of the soil—to free it from superfluous moisture—to cultivate it to the greatest advantage—to raise its productions at the least expense—to procure the best instruments of husbandry—to select the stock likely to be the most profitable—to feed them in the most judicious manner, and to bring them to the most advantageous markets—to secure the harvest even in the most unpropitious seasons—to separate the grain from the straw with the most economy and success—and an endless variety of other particulars, require a degree of knowledge, *to do them well*, of no common description."

It is said that Sinclair was first induced to direct his attention to a digest or code of agriculture, by a suggestion of Sir Joseph Banks, "that an account of the systems of husbandry adopted in the more improved districts of Scotland, would be of the greatest advantage to the agricultural interests of the United Kingdom: and that it was incumbent upon a native of Scotland, while presiding at the board of agriculture, and possessing all the means of information which that situation afforded, to undertake the task. In objection, Sir John argued, that the labor of accomplishing such a task, would be very great—that it would be extremely difficult to obtain such information, and that it would afford cavillers an opportunity to attack the board, on the grounds of promulgating doctrines which, if acted on, might prove ruinous to many farmers."* But all obstacles vanished, when Sir Joseph further urged, "that agriculture has derived, is deriving, and will derive, more benefit from Scottish industry and skill, than has been accumulated since the days when Adam first wielded the spade." This was in 1809. Sir John immediately set about collecting and arranging the materials for his Code of Agriculture. He opened a correspondence with the most eminent men and best practical farmers; made three or four tours upon the continent, to acquire a knowledge of the improvements there, particularly in Flanders and Holland, of which he published accounts; and he also published a Code of Health, adapted to the various conditions of life. He was mainly instrumental in promulgating the knowledge of Elkinson's system of draining, and of its being extensively adopted; in inducing Davy to undertake his valuable work upon agricultural chemistry; in instituting and giving efficacy to the Highland Agricultural Society; and in introducing to public notice McAdams' improved system of road making. So late as 1815, the latter was first put into effectual practice, by the Bristol District of roads; and such was found to be its great utility, that now most of the principal roads in Great Britain have been reconstructed upon this admirable plan. He also published, after his Code of Agriculture had passed through the press, a Code of Statistical Philosophy, a Code of Finance, and had nearly prepared for publication a Code or Digest of Religion. "We are informed," says his biographer, "that in his introduction to the proposed code, the writer proceeds upon the supposition that he had undertaken the instruction of an individual, who was either altogether unacquainted with revealed religion, or who had imbibed very limited or erroneous views concerning it. The pupil is led through a system of progressive instruction. He is presented with a general view of human nature, comprehending, first, the corporeal frame, and, secondly, the mental faculties of man—then, with an account of the globe, where the Creator has placed him—then, with that of the heavenly bodies, by which the earth is encompassed. Rising from nature, up to nature's God, it was next intended, reverentially, to contemplate the being and attributes of Him by whom all things were made, and through whom all things live, move and have their existence. It was then intended to inquire, whether any revelation of the Divine will had ever been made to the human race, and, if so, where the best account of that revelation was to be found. It was intended that the work should conclude with an examination and explanation of the precepts and doctrines thus promulgated to man, to guide him in his conduct here, and lead him to the enjoyment of the promised happiness hereafter. The mass of mankind," to continue our quotations from the work before us, "who are misled by the tinsel of military glory, the superficial glitter of eloquence, or the accumulation of great wealth, are incapable of appreciating the silent effects of social improvements; but we confess, that if it were in our choice to select the path of glory, which wisdom and the better experience of mankind will consecrate, we should prefer the distinctions arising from the useful and unequivocal career of a Sinclair, to any renown attached to the splendid achievements of a Bonaparte, the fascinating eloquence of a Pitt, or the unmeasured wealth of a Baring."

In regard to the Code of Agriculture, as many of our readers cannot have had an opportunity of seeing it, we copy from the Quarterly Journal of Agriculture, a brief notice of its contents and arrangement, as useful to every class of farmers, in suggesting the points and the order in which the prominent matters in farming should engage their attention.

"The first section of the Code of Agriculture is devoted to the consideration of the preliminary points which a farmer should ascertain, before setting himself down to the cultivation of any considerable extent of land, particularly climate, soil, subsoil, elevation, aspect, situation, tenure, (whether in property or on lease,) rent, assessments on, and size of farm. In the second section, inquiry is made regarding the means essential to secure niceness in farming, namely, capital, regular accounts, arrangement of agricultural labor, farm servants, labors in husbandry, live stock, implements, agricultural buildings, command of water, divisions of fields and farm roads. In the third, the various modes of improving land are pointed out, by cultivating wastes, enclosing, draining, manuring, paring and burning, fallowing, weeding, irrigating, flooding, warping and embanking land. The fourth section is devoted to the explanation of the various modes of occupying land, in arable culture, in grass, (including the dairy husbandry,) gardens and orchards, woods and

* We, too, have cavillers, who scout at the idea of improving their practice, by book farming—by the examples of others, who excel in husbandry, and who bring their minds to aid in the improvement of the soil.

plantations. And the fifth, which concludes the work, is occupied in a general consideration of the means for improving a country, the diffusion of information, the removing of obstacles to improvment, and by positive encouragement [by government.] In the body of the work, only general principles are discussed, and where minute information is necessary, it is inserted in the form of foot-notes; while points requiring further explanation or detail have separate papers devoted to them in the appendix. The Code of Agriculture, by Sir John Sinclair, must ever be regarded as the standard work on the state of that science—for he has raised it to the dignity of a science, by establishing its principles—especially as referring to the commencement of the 19th century. It is a monument honorable alike to his ingenuity, his untired perseverance and his general philanthropy. His mind was impressed with the belief, that the prosperity of the human race in a boundless measure depended on their knowledge of cultivating the soil, or, in other words, increasing the natural means of subsistence; and he reckoned no labor too assiduous, no obstacle insurmountable, when such an object occupied his generous enthusiasm."

Importance of Chemical Knowledge in Husbandry.

"Agriculture," says Sir H. Davy, in one of his lectures, "to which we owe our means of subsistence, is an art intimately connected with chemical science; for although the common soil of the earth will produce vegetable food, yet it can only be made to produce it in the greatest quantity and of the best quality, by methods of cultivation dependant upon scientific principles. The knowledge of the composition of soils, of the food of vegetables, of the modes in which their products must be treated, so as to become fit for the nourishment of animals, is essential to the cultivator of land; and his exertions are profitable and useful to society, in proportion as he is more of a chemical professor.—Since, indeed, the truth has been understood, and since the importance of agriculture has been generally felt, the character of the agriculturist has become more dignified and more refined; no longer a mere machine of labor, he has learned to think and to reason. He is aware of his usefulness to his fellow-men, and he is become at once the friend of nature, and the friend of society. If land be unproductive, and a system of ameliorating it is to be attempted, the sure method of obtaining the object is, by determining the cause of its sterility, which must necessarily depend upon some defects in the constituents of the soil, which may be easily discovered by chemical analysis. Are any of the salts of iron present? they may be decomposed by lime. Is there an excess of silicious sand? the system of improvement must depend on the application of clay and calcareous matter. Is there a defect of calcareous matter? the remedy is obvious. Is an excess of vegetable matter indicated? it may be removed by liming, pareing and burning. Is there a deficiency of vegetable matter? it is to be supplied by manure. In the selection of the remedy, after the discovery of the evil, chemical knowledge is of the highest importance. Limestone varies in its composition, and by its indiscriminate application, we may aggravate the sterility we seek to obviate. Peat earth is an excellent manure, but it may contain such an excess of iron as to be absolutely poisonous to plants. How are such difficulties to be met but by the resources of chemistry? That much vague speculation may be found in the works of those who have lightly taken up agricultural chemistry, it is impossible to deny. It is not uncommon to find a number of changes rung upon a string of technical terms, as oxygen, hydrogen, carbon and azote, as if the science depended upon words rather than upon things. But this is in fact an argument for the necessity of the establishment of just principles of chemistry on the subject. If a person, journeying in the night, wishes to avoid being led astray by the ignus fatuus, the most secure method is to carry a lamp in his own hand."

The Turnip Flea.

Our correspondents make great complaint of the depredations of the turnip flea, and ask us to prescribe a preventive. This insect is in length nearly the eighth of an inch; smooth, shining, and of a brassy black colour, with a slight tinge of green, particularly on the wing cases. This little insect preys upon several species of plants, as cabbages, radishes, but is particularly fond of the turnip, which it attacks both in its perfect and larvæ state. It is principally destructive when the plants are in the seminal, or first leaf, and are tender. When the second leaves are unfolded, and the plants have acquired strength, their depredations are comparatively insignificant upon the leaves, though they continue, in their larvæ state, to prey upon and injure the roots. They are extremely voracious, an individual consuming, as has been ascertained, ten young turnips in a day.—In Britain, where there are from 60 to 100 acres of turnips on a farm, they cause immense losses.—They afford evidence, that there are few pleasures or profits without alloy, and seem to be a means of inciting man to constant healthful industry and vigilance.

There have been many receipts published as a preventive of the evils inflicted by this pigmy enemy of our crops; but hitherto all seem to have failed of producing the desired effect. Among other applications to the seed, oil, brine and sulphur have been used, sometimes with apparent success; and one farmer completely saved his crops for fifteen years, by keeping the seed sometime previous to sowing, among a quantity of flour of sulphur, and sowing the sulphur along with the seed. In this way the juices of the plant might be tainted by absorption, so that the insect had no relish for it.

The best remedies for the evil seem to be:

1. To have the ground well prepared and rich, so as to insure a vigorous growth to the young plants.

2. To sow thick, that a part may at least have a chance to escape the flea,—and the crop being thinned at the first hoeing. And it has been found effectual to sow thick an extra row between every two rows intended for the crop—the thick sown being more tender, are preferred by the flea, and may be extirpated by the cultivator at the first dressing,—the extra seed and labor bearing no proportion to the value of the crop.

3. And principally, reliance must be had, when the young plants are threatened, on dusting the plants with some kind of powder. Soot, ashes, gypsum, &c. have been used for this purpose, "but there can be no doubt," says the Quarterly, "that by far the most useful application of this kind is quick-lime."

The Doncaster Agricultural Association, which has rendered the most essential service to the agricultural world by its labors and publications, has given to this subject the best attention; and has concentrated, by their queries, the experience and improvements of more than one hundred practical farmers, on the means of averting the evils induced by the turnip flea. From this information, they have prescribed certain rules of prevention, from which we take the following, as particularly adapted to our practice:

"Most effectually to insure the speedy growth of the plant, the land should be kept in the best possible state of cultivation.

"The system of ridging the land, with manure under the rows, and drilling on the ridges, should be adopted in every possible case.

"The most favorable opportunity for ridging should be chosen, and it ought to be particularly observed, that the land be not ridged in too dry a state.

"As soon as the land is opened for manure, it ought to be laid in, the ridges formed, and the seed drilled immediately. The quicker these operations follow each other, the greater chance there is of a good crop.

"The manure chosen should be adapted to the soil, and such as is likely to insure the speedy growth of the young plant, and a full quantity ought to be allowed.

"The seed should not be deposited in the manure, but the manure thinly covered with soil, and the seed drilled in this soil.

"A very liberal allowance of seed ought to be given, as much as 3 lbs. or 4 lbs. the acre for drill, and 6 lbs. or 7 lbs. for broadcast, and the seed should be of one year's growth.

"As soon as the plant appears above ground, it should be dusted with quick-lime, and this repeated as often as rain or wind beats it off, and the fly reappears."

We will only add, that we spread our manure, drill upon the level surface, and, in eighteen years' practice, have never made any topical application, and yet have never failed in obtaining a fair crop of turnips.

Mildew on the Gooseberry.

At page 59, of our last volume, we mentioned our success in *arresting* the progress of the mildew on our gooseberries, by sprinkling the bushes with a weak pickle; and in page 159, we stated the Rev. Mr. Reed's mode of preventing the blight in pear trees, by impregnating the soil with iron, and his suggestion that salt would prevent the mildew on the gooseberry and the grape. We applied the blacksmith's cinders to a part of our pear trees, and tan to another portion; and there is yet no appearance of blight on either. In February we had the ground about our gooseberry bushes well saturated with strong pickle, and our gooseberries are perfectly free from mildew, for the first time in twelve years. It is not yet time to determine upon the efficacy of the pickle on the grape vines. We infer from the facts that have fallen under our notice, that the mildew is an abiding parasite, particularly at the collar and at the roots of the gooseberry and grape; that the minute seeds of this parasite are wafted to the fruit in a certain state of the atmosphere, and that salt destroys the vitality of the prolific parent in the soil. See No. 10, vol. iv. We beg here to observe, that we err here as in the most other kinds of fruit, in esteeming the *largest* as the *best* varieties. The large gooseberry has generally a thick tough skin, while the best, and they are generally of a medium size, have a thin smooth skin, indicative, also, of good flavor.

We overlook the Main Point.

Did our politicians, including, of course, the honorable members of our legislatures, display half the zeal, and expend a tithe of the money, to enlighten and encourage agriculture, and to render the earth more prolific in the bounties of Providence, that they display and expend in the scramble for power—for the spoils of office—which many grasp at but few obtain—we should have less complaint of hard times; and we should become, what we too vauntingly boast of being already, an independent, a prosperous and happy people. There would then soon be but little occasion for young lawyers and boys running about to instruct our sturdy farmers in their interests and political duties. He is not a *wise* man who does not know *how* to vote—nor a FREE MAN who *dares* not vote as he thinks right—nor a PATRIOT who *will* not do so.

Sale of Mr. Weddle's Cattle.

In our advertising sheet for February, was noticed the intended sale of a fine stock of cattle at Bloomfield, the property of Mr. Thomas Weddle. Twelve cows and heifers sold for $4,133—averaging $344 each, and some selling as high as $500 and $520. Nine bulls sold for $3,437, averaging $382—two of them bringing $600 each. Three cows and their calves for the three last years, sold for $1,690, $1,584 and $1,642. The highest priced animals, and we presume the best, were generally bought by Gen. Dudley, of Kentucky.

Hints on Pruning Forest Trees.

There were five competitors for the Highland Society's ten guinea premium, offered for the best essay on the pruning of forest trees,—a business which, to be sure, is not yet much practised among us; but as many of the principles which govern in the operation, apply in the pruning of fruit and ornamental trees, we shall state some of them. The essays are not published entire, but a digest of them is given by William Scott, one of the directors, who states, that on all the leading points, except as to the time of pruning, there is almost a perfect coincidence of opinion expressed in them all.

1. *Is pruning beneficial?* "Although pruning in ordinary cases does not ultimately increase the weight or bulk of wood, yet trees which are *early* and *judiciously* pruned, will be improved in quality, increased in their useful dimensions and ultimate value, and a greater number can be grown on a given space."

2. *Thinning the plants*, as they advance in growth, is deemed indispensable.

3. *Pruning should be begun early*, and the directions for pruning, coming as they mostly do from professional nurserymen, are worth remembering:—"When trees in the plantation have produced three, or very thriving two years growth, pruning should be commenced. At this period the knife is the most suitable instrument, and the *top* is the principal part of the plant which requires attention. In order that only one shoot may be allowed to remain as a leader, the others next in size, if not very inferior, should be headed down, generally to about one-half the length, and all the stout lateral branches of the tree headed in the same manner. No such branches need be cut close to the stem at the first, second, or third pruning." "All suckers or branches that spring from the roots, which tend to make the plant more like a bush than a tree, should be taken away."

4. *Error to be avoided.* The practice of cutting away the side branches to a certain height, at the first pruning, and afterwards to operate only on the under branches of the tree, is reprobated, as tending to produce a small trunk, an irregular top, and side-branches more vigorous than the leader. Under this management, in "exposed places, not one in a hundred ever becomes a large and valuable tree."—"Such an excess of amputation destroys the health of the tree, by depriving it of the organs by which a sufficiency of sap is secured [elaborated] to be afterwards converted into wood."

5. The leading shoot should be preserved, and all others checked which have a tendency to compete with it, so as to divide the stem into forks or clefts.

6. "The writers agree in opinion," says Mr. Scott, "that young trees should not be pruned at once close to the stem, but that the larger branches which it may be necessary to cut away, should be shortened first, and cut close afterwards." As decidious trees give out an irregular tier of branches yearly, any branch should be shortened which is of greater length than the majority of those on the same tier; or, if the whole of them be too long, they must be shortened. By the concentration of the sap, which the shortening effects, a much greater quantity is thrown into the main stem," the leaves are much larger, the foliage healthier, and the tree shoots up much faster, and at the same time maintains a proportional circumference of stem.

The objects of the pruner should be "to give, in

trees of advanced size, twice the length of the trunk to that of the top, in good soil; and in poor soil to leave the top as long as the trunk; and 2d. to have one inch in circumference to 15 feet of height; and if the circumference is proportionably greater, so much the better."

With regard to coniferous trees, as the silver fir, spruce, pines, &c. it is objected to their being pruned, *in any soil or situation.*

The opinions of the writers as to the best season of pruning are variant. One recommends April to June; another before the buds swell; another in autumn, &c. and Mr. Scott, to reconcile the contradictory opinions, proposes to prune "a little before the buds begin to swell,—or a little while after the leaves have expanded." We repeat—late in June.

Farming Implements.

The improvements which have been made in the implements of husbandry, in the last thirty years, and the introduction of new implements, have not only tended greatly to abridge manual labor, but, by doing the work much better than it was formerly done, have increased much the bounties of the soil. Having the desired implements, the next object is to learn to use them with facility and skill, a task more difficult in acquiring than many seem to imagine. Take, for instance, the plough, the most common implement of husbandry, and we venture to say, that not one in fifty who uses it, knows how to use it as well as he might do; or, knowing, does use it as he ought to do. But not only have the implements long in use been improved in their model and fabrication, but new ones are coming daily into more general use, as cultivators, drilling machines, rollers, straw cutters, hay rakes, mowing machines, root-slicers, potato hooks, turnip hoes, &c. which greatly aid in the economy of the farm. It has been our object to note such of these as came under our notice, and to commend them so far as our observation and experience would justify. This we shall continue to do, in the belief that they are calculated to facilitate greatly the labors of the farm, and to increase its products and profits.

We in the first place invite the reader's attention to the *Potato Raiser*, of the Messrs. Lawsons, of Edinburgh, figured and described in the present number. The potato is extensively and profitably cultivated among us, and its culture is likely to increase. It is an excellent crop to ameliorate and cleanse the ground—to convert long into short manure, and thus fit it for small grains, and no less excellent for stock and the market. Under the improved mode of management, it may be planted and receive its after culture, almost exclusively, with the plough, harrow and cultivator, with but little aid from the hand-hoe. The great expense is in harvesting the crop. If this can be lessened, and the Messrs. Lawsons and Capt. Center assure us it can be greatly, by a potato plough, like the one described, the culture of this valuable crop may be profitably enlarged. The expense of procuring a potato raiser, or a potato mould-board, and fitting it to a common plough, will be trivial, compared to the advantages which are likely to accrue from its use.

Hoyt's Drill Barrow is also figured and described in the present number. We have not had it in operation; but from examining the principles upon which it works, we give full credit to the declarations of the patentee. The cost is about $10, and it is said to be adapted to the sowing of all kinds of seeds.

Bushnell's Drill Barrow.—We have had this in operation, and it justifies the high expectation we expressed of its value. It differs from any we have seen in this: the forward wheel pulverizes and levels the surface, and thus enables the workman to graduate the coulter, while the after wheel breaks and presses upon the seed the earth which is thrown upon it by the brush or rake which is applied behind the hopper. This machine drops four to eight turnip seeds, at intervals of about eight inches; and it has slides adapted to seeds of all sizes, which may be used at pleasure. These slides are of tin. They ought to be of wrought iron, like those in Merchant's drill, which latter, by the bye, suffers nothing in reputation or value, by being better known. A Scotch farmer, familiar with the drill barrows of his native country, and who has used Bushnell's, pronounces it the best he ever tried. Ample reference to the patentee and venders, will be found in our back numbers.

Mr. Thorp has improved his *Turnip Hoe*, by making the shank, which connects the cutting part with the eye, stronger and of better iron, and by using better copper rivets than heretofore. This hoe is worthy the attention of every turnip raiser, and of every gentleman who takes exercise with a hoe in his garden.

Potato Hooks.—Several models of these have been sent us. They are all useful and serviceable in many operations of the farm and garden. In culture, they effect an important purpose—they loosen the surface to any reasonable required depth, pulverize it, and render it pervious to atmospheric and solar influence, as well as free it of weeds. It is excellent in raising potatoes and turnips. A new one has just been presented to us by Messrs. Ripley & Spalding, the manufacturers, residing at Norwich, Ct. They are for sale by our neighbor Thorburn, at 50 cents.

Root Slicer.—We have received one from Mr. D. M. Walker, of Whiting, Vt. As our turnips were mostly fed out when it came to hand, we had not a fair opportunity of trying it; but we did experiment upon it so far as to ascertain, that it would not only slice, but cut into inch strips, a bushel of ruta baga in a minute, turned by a smart man. This machine was noticed and described in the last number of vol. iv. It is not patented. The iron work costs about $6. The wood work may be made by any carpenter, or an ingenious farmer. If Mr. Walker will renew his request, his letter having been mislaid, it shall be promptly attended to. We should advise that the knives and cutters be reduced one-half, in this machine. It will still perform its work expeditiously, and be less fatiguing to the operator.

Van Bergen's Cultivator.—We have used this implement, the present season, in cultivating our hoed crops, and think it has a decided preference over the old triangular drill, though we have had no opportunity of comparing it with Bement's. The side pieces are parallel with the centre one, and each of the former has a forward coulter to cut the weeds and pulverize the soil, and a coulter with a small mould-board in rear, to gather the loosened earth in the space between the rows, or to throw it to the plants. The implement may be contracted or expanded at pleasure, or the laterals may be taken off, and the centre coulters used among beans, or other crops, where the drills are 12 or 18 inches asunder. In the first dressing of our corn, potatoes, &c. the loose earth was turned from the hills. The plants were then cleaned with the hoe, and when necessary, thinned, and the cultivator soon after followed, turning it to the rows, and giving the plants a slight earthing. In the potato crop, the small plough follows the cultivator, to give a slight, but the only earthing it receives. The cultivator may be advantageously used a third or even a fourth time, in the corn crop: it keeps the surface mellow and clean. We can with confidence recommend this implement, for all lands not encumbered with large stones or stumps. The fault in this machine, if any, is the weakness of the wood-work, and of the cast-iron teeth, which are liable to be broken if they are brought in contact with stout roots, or immovable stones. Our machine has suffered in this way.

The operation of Bone Dust.

Bones are a phosphate of lime, that is, they are composed chiefly of lime and phosphoric acid. When crushed, and deposited in the earth, by the action of heat and moisture, the bones are soon reduced to a state of decomposition, and the original elements of which they are composed are thereby set at liberty to form new combinations in the great circle of revolving nature. By this means, the phosphoric acid is set free in the form of gas, and the lime is left in its caustic state, deprived of its neutralizing acid; these two substances are then left to produce the powerful vegetation which we see to follow their application as manure in their new state; and as we know of but few principles in nature more powerfully active than phosphorus, in all its states of existence, we have formed the idea, that phosphorus, in conjunction with the lime, perhaps in the state of phosphoric acid gas, is the chief cause of the rapid and luxuriant vegetation produced by the application of bruised bones as a manure. The phosphorus of our shops is so easily ignited, that the least friction sets it on fire; nay, if exposed to the air, it burns spontaneously by a slow combustion, and therefore can only be preserved from combustion by being immersed in a vial of water; hence I consider that crushed bones evolve a considerable quantity of gas and heat during decomposition in the earth. As I have attempted, in a field of my own, to try some experiments with the bone dust, I shall, with all deference, state the results. 1. I find that old rotten bones, and dry bones, crushed properly, work sooner, and are more readily efficient as a manure, than fresh or green bones; the latter requiring a longer space of time to decompose and part with their phosphoric principle than old bones, already partly in a state of decomposition.* 2. I find that bone dust acts most readily and powerfully, if, the night previous to its being put into the earth, it be formed into a heap, and thoroughly wet,† and allowed to be till it is beginning to become warm. It then ought to be put (in its wet state,) into the ground, when a powerful and luxuriant vegetation immediately follows. In a dry soil, it remains long before decomposition, and also in very wet ground. This may account for what, to a certain extent, by some has been considered a partial failure of its usual effects.—*Aberdeen Journal.*

* Bones may, in this respect, be compared to dung: in a half-rotted state, they work *sooner*, but do not work *so long* —the gases of both, are lost by partial fermentation.

† We have found this process facilitated by blending ashes with the bones.

A Hint to Cattle Breeders.

T. A. Knight, the very distinguished horticulturist, publishes in the Farmers' Magazine, a communication on the ill effects of overfeeding young stock. Young cattle thus brought up, when taken into other districts, have been found, with their offspring, incapable of thriving upon common pastures. Animals, he thinks, which have been overfed from their birth, and whose ancestry have been subjected to the same treatment, acquire a power of eating and digesting a much larger portion of food than others. He admits that the improved Durhams are brought to market at a very early age, oxen of very great weight and excellence; yet he says it is well known that all those young animals come to market deeply insolvent, the sums for which they are sold being greatly less than those expended in feeding them. In illustration of their expensive keep, he cites the following facts:

"Three Herefords and three Durhams," says he, "were put into stalls, to be fatted, on the 3d of November. The weight of the Herefords was then 33 cwt. and that of the Durhams 38 cwt. and 14 lbs. Between that period and the 30th March, when all were sold in Smithfield, the Durhams consumed 12,755 lbs. weight more of turnips, and 1,714 more pounds of hay, than the Hereford; but the Durhams, notwithstanding the larger size when put to fatten, and the greatly larger quantity of food consumed, sold for only 20 shillings more than the Herefords; and such I believe will ever be the result of similar trials, when one class of animals has been properly fed, and the other over fed, the merits of the breed being equal."

This reasoning is true in regard to perennial vegetables—trees for instance. If the nursery from which they are drawn, and in which they have been raised, is very rich, they will not thrive so well in a common soil, as those which are taken from a soil of an inferior quality. If the habit of gormandizing is established when the plant or animal is young, neither will thrive so well afterwards upon spare food, as if they have been brought upon more moderate fare.

South Down Sheep.

"My chief reasons for preferring this breed," writes Mr. H. Watson, "are:—that the South down sheep, although an active and spirited animal, are easily controlled and managed by a good shepherd—can go over more ground for food than any other kind of sheep, without stopping their growth,—and when tried by severe storms in winter, will brave it better than even the black-faced Highland,—and although reduced very low in spring, sooner pick up condition, than the other short woolled sheep. As a proof of the Southdown's inclination to fatten, when put to good keep, I may mention a fact, that while I have seldom been able to produce a fat Cheviot sheep the same season she has reared a lamb, I never fail to make good fat of the South downs *off grass.* Their wool is so closely matted on their backs, and about the head and neck, as to be almost impervious to rain or snow; hence, so soon as the storm ceases, they appear dry and comfortable, their coat not the least disordered, and altogether free from that drenched appearance which longer woolled sheep exhibit, even for days, after a winter storm."

Mr. Watson says the South downs are remarkably healthy; that his loss in them has invariably been much under that of any other sheep he has bred; that when crossed with a well-bred Leicester ram, and brought into good keep, they produce the most profitable lamb that is bred; that the wool fetches the highest price of any British wool; and that he has realized from them, when 16 months' old, not less than 40s. ($8.88) each, wool and mutton. But mark! Mr. W. gives this preference over every other sheep, for districts "*too high to be occupied during the whole season by a flock of Leicesters* (Bakewell) *and under that level which the native* (Scotch) *sheep only can thrive upon.*"

On an agricultural education of gentlemen farmers, and the scientific education of practical ones.

Men are prone to become idle as they grow wealthy; but if they have been early imbued in the practical knowledge of their business—say, for instance, have been brought up at the counter, or on the farm, their early habits, and the practical knowledge acquired in youth, are of invaluable service to them in more advanced age, though they do not submit to manual labor—in superintending and directing their affairs. It is a kind of knowledge which no man can get rid of, if he will, but it will intrude upon his mind, and guide his judgment, in after life. The theory will not do alone. The head may teach the hands *what* should be done; but the hands must teach the head *how* things should be done. The man who undertakes to direct the operations of a farm, without a practical knowledge of the manipu-

lations and mechanical labors which are to be performed upon it, generally fails in his expectations; and, if he has undertaken it for recreation or for profit, he sinks his capital, or retires from his new employment in disgust, before he has either tasted its pleasures or become capable of judging of its advantages. Whatever be his pretensions to science, there are a multitude of details in farming, which make every thing on the score of economy, which are best learnt in youth, and without a personal and practical knowledge of which, all is guess-work and uncertainty.

Nor have we, at present, any institutions where the science can be acquired by young gentlemen, such as will qualify them to manage with judgment and profit, the estates which they are expected to heir, and destined to occupy. In existing schools, the sciences are taught rather as abstract studies, than as auxiliaries to productive labor. It is only by giving demonstrations of their principles, on the farm and in the shop, that we are enabled properly to instil into the minds of youth, their important bearings in the business of life. How little do the graduates of our colleges know, when they come from the classic halls, of the application and importance of the natural sciences, and of chemistry, to the business of the farm. But give them two years of practical instruction, and then scientific acquirements become useful and highly profitable to them. But if the science and practice are blended in the school of instruction, the second apprenticeship is superseded—the two years are saved—and the boy comes into manhood with the highest qualifications, and suitable habits, to distinguish himself for usefulness, either as a laborer or manager on his own estate, or as a valuable assistant to others; and with the knowledge and habits acquired in such a school, there is little danger of his becoming tired of the farm, a drone in the commonwealth, or of his selling his principles, and compromitting the freedom of his country, for the corroding "spoils of office."

The importance of the sciences to all the arts, and more especially to agriculture, is every day becoming more manifest. Scotch husbandry has more of science than that of any other country; and Scotch husbandry has reaped from it the richest rewards. Scotland has progressed in improvement, in the last half century, much faster than any other country. And the improvment of the mind, and the habits and comforts of her population, have advanced with the increased productiveness of her soil. But Scotland has not been alone in efforts to bring the mind as a powerful auxiliary to agricultural labor. The Great Frederick of Prussia, was in the habit of expending more than a million of dollars annually to improve the agriculture of his dominions, which he considered as manure spread upon the ground. France places $100,000 annually at the disposal of one of her ministers, to be employed for a like purpose. Bavaria, Hungary, Wirtemburgh, Prussia, France and Ireland, have their public schools of scientific and practical instruction in agriculture. But we have yet to begin in this work of usefulness—in this work of mental, moral, and we may add political improvement—for, disguise the matter as we will, our security as a free people depends emphatically upon an enlightened and prosperous yeomanry. Half the money that has been expended, or in the opinion of some wasted, in the Seminole war, would have built and endowed an agricultural college in every state of the union; and a tithe of the national expenditure now, over what it was a few years ago, amounting, as it does, to 14 or 15 millions annually, applied to improve and elevate the standing of rural labor, would have added, by this time, at least a tenth to the annual products of our agriculture. It is not our province to find fault with what *has* been done—we wish only to state what *might* have been done.

On the importance of practical and scientific instruction to the higher classes, and of scientific instruction to those of lower grade, we beg to offer the following extracts, which we copy from a lengthy communication on the former branch of this subject, published in the Edinburgh Quarterly Journal of Agriculture, and which have a particular reference to the south and to wealthy farmers of the north, who think their sons cannot become *great* men, without they are sent to the counter, the bar, or the desk, or assume the *dignity* of mere idlers.

"Strange to remark, anxious as landed proprietors certainly are to bestow a liberal education on their families, which is the best legacy they can leave to their younger sons, agriculture, which most materially affects the interests of themselves and their eldest sons, the very profession by which they are upheld in the high stations of society they occupy, they almost entirely neglect, as if, after the acquirement of a superior education, a man should be ashamed of attending to the means of his subsistence. Is it not 'passing strange,' that any country gentleman should be unacquainted with farming, the very source of his livelihood, when all other classes of people, in learning their respective professions, whether learned or vulgar, serve apprenticeships, and toil through life thereafter? It seems to be forgotten that land ownership *is* a profession, that it is in the manner in which *it* is conducted, that the best interests of the country may be injured or promoted, and that it is a profession which requires as great capacity of mind to practise it aright as to conduct those large commercial and manufacturing establishments whose importance is so much lauded."

The writer then proceeds to enumerate the difficulties and losses which result from trusting the business of the farm to factors and agents, most of whom are wholly unqualified for the task; and the pleasurable sensations which are lost to the owner, by not understanding, and feeling a deep interest in, the various operations which are continually going on. He then proceeds—

"Now the effects of all these evils, we venture to assert, may be most effectually remedied by the sons of landed proprietors, who will themselves become land owners, acquiring a thorough knowledge of farming in their youth, as a necessary branch of practical education, and the management of their estates will then be felt a desirable gratification, not a task." "Proprietors would then discover there is not a more rational, pleasing, or interesting study, than the science of agriculture, and its practical application, nor one which can be so well combined with those manly sports and amusements in which it is the pride of our country gentlemen to excel. They would then have no temptation to reside abroad, but would discover, that a knowledge of the minutiæ of farming creates a daily increasing interest in field operations, and the rearing of stock."

"Where is all this important knowledge to be acquired? It is to be acquired, like every other species of knowledge, by observation, in the operation of nature, as displayed in the fields of art. Is this question asked in a country whose proud boast is to possess more enterprising, educated, and well-informed farmers, [a boast that ought to apply literally and most emphatically to our free country,] than perhaps any other country in the world?"

The writer then proceeds to answer the question by recommending, that these sons of wealth, and inheritors of land, spend two years with an intelligent farmer, under the direction of a scientific tutor of competent acquirements. But how much better would be a school, in which there should be a tutor for each of the prominent branches of agricultural science, a first rate practical farmer, a library, an experimental farm, a philosophical apparatus, a mechanical laboratory, a well conducted garden, and the stimulus of competition. But let us attend to what our writer recommends that the tutor should teach:

"He should be competent to teach," says he, "the application of chemistry. He should teach the application of the principles of mechanics, in order that the principle on which any implement operates may be comprehended,—the application of the principles of hydraulics, that the principles of draining, embanking and constructing reservoirs for water, may be easily understood. He should teach botany, to enable young farmers to distinguish soils by their natural vegetation; and particularly the physiology of plants, that the culture of plants of whatever kind, may be in conformity with appropriate soil and situation. Also geology, that the sub-strata, or sub-soils, on which soils rest, may obtain due regard. Meteorology should be studied, in order to be able to anticipate the changes of the weather. The anatomy and physiology of animals are also requisite for him to teach, that the good points of live stock may be duly appreciated. And above all, he ought to be acquainted with the *practices* of agriculture, for although the farmer will no doubt undertake to teach this department of the system, yet, unless the tutor also understands it, he cannot so successfully demonstrate the applications of science to the operations of practice."

"With colloquial prelections and discussions in the house at stated hours, so as not to interfere with the hours of labor in the fields, and with demonstrations in the field, whilst the labor was in progress, a vast mass of useful information would in a short time be conveyed to, and acquired by, the pupils."

Practical Effects of Draining.

The system of draining introduced into Scotland some years ago, and proceeding so rapidly, must be regarded as the greatest improvement of modern times. The landlord and farmer do it jointly. Here is a safe investment for money—the expense repaid in twenty years, regular interest, and the land improved in value above one-third. Green crops are grown in great abundance after draining, where no attempt could be made before, and the farmers allow they have four crops in three years, and the draining pays on an average eight per cent. I know an instance of a wet clay soil, almost covered with rushes, being drained and improved at an expense of £15 an acre ($65); the green crops were so productive as to repay the expense in one year, and after deducting the old rent, the improvement pays fourteen per cent upon the outlay. The drains are from 20 to 30 inches deep, and at the distance of from 12 to 20 feet, sometimes in the furrows of the field, or across, or obliquely, as the descent may suit, and sometimes the land is laid flat. Draining, to be remunerative, must be done effectually. A field cannot be drained by putting a drain in a corner, one here and another there; by running one across the field, and another diagonally to that. It must be done completely, or not at all, for half measures are ever useless.—*Qr. Jour. of Ag.*

Draining by Steam.

Joseph Glynn has received the gold medal of the Society of Arts, for a communication on his application of steam power to draining fens, or extensive marshes. The process consists in excavating broad ditches through the fens, and applying stationary steam power at their termination, or lower side, to raise the water to a higher level, that it may pass off. His letter, with the estimates it embraces, is one of great interest to the civil engineer, and augurs favorably to the landed interests. Mr. G. had been employed in eleven districts, and had already drained about 90,000 acres, the value of a portion of which has in consequence been increased from £10 and £20 to £50 and £70 per acre. One tract contained 25,000 acres, and was completely drained and kept dry by two engines of 60 and 80 horse power. An 80 horse power engine, working 12 hours in a day, raised from 19 to 25 millions tons of water in a year.

Deep Ploughing—Treading in Seed.

We gather the following facts, which should not be lost to our readers, and which are in accordance with the teachings of science, from the proceedings of the Rutland (England) Agricultural Association, as published in the Farmers' Magazine.

On Mr. Barker's health being given from the chair, this gentleman returned thanks, stated the great improvement in ploughing, which had resulted from the distribution of premiums, at ploughing matches, and which had amounted to £40, and after referring to other local improvements, he proceeded to say—

"I will detail to you an experiment, which I made last year in deep ploughing. I felt at first inclined to try the press, but some said try the drill, some the broadcast, and at last I selected the drill, and had the seed trodden in by my Lord Lordsdale horses, when they were at exercise, and afterwards had a flock of 400 or 500 sheep driven over it. The produce of this land averaged seven quarters (56 bushels) and one peck an acre throughout 22 acres—(the total product amounting to £402 3s. 9d. (= to $1,785, or $81 the acre,) and from two bushels and one peck of seed per acre sown; and I wish you would try the experiment of treading in the wheat, or fixing it firmly in the ground, which I am sure will lead to a similar result. As regards the exhibition of animals, I think we are still wrong in principle, and in endeavoring to produce so much fat. If we paid greater attention to the increase of *eatable flesh*, I am certain a great improvement might be effected, especially in the quality of Leicestershire sheep and pigs. When our prize animals are killed, what do we find? Why perhaps five or six inches of fat to one of lean. I intend, another year, to offer a premium for that animal which, when dead, shall show the most *lean*, and I hope that some one will offer a similar pig premium. I must beg you to take my hints about fat and lean into consideration, and see whether we cannot produce a greater quantity of *eatable meat* than we have hitherto done."

Useful Memoranda,

From the Farmers' Magazine.

CARROTS.—The *Reverend* (for there are clergymen in England who rank among the most enterprising and intelligent farmers,) J. Monkhouse, has raised 30 tons of carrots on an acre. Some of the roots weighed more than 7 lbs. At 2s. per cwt. this crop would be worth £60 (= to $266.40) per acre.

THE BLOOD RED WHEAT is said to be uncommonly prolific; and as an evidence of the fact it is stated, that Mr. Wm. Carlishaw obtained from an acre of old cultivated land, 66 bushels of the best, and three bushels of hinder ends—being something more than 23 loads per acre.

PROFIT ON RAISING GOOD STOCK.—The stock at Carlton Hall sold as follows:

5 cows, average price..	£68,	equal to	about	$302.
3 2 year old heifers,.....	21,	"	"	90.
5 one year old do	19,	"	"	84.
5 heifer calves,.....	13,	"	"	57.
3 bulls,.....	15,	"	"	65.
3 bull calves,.....	16,	"	"	69.

Thus 24 cattle brought $2,900. What would 24 common like aged animals have brought? Not $300.

Convertible Husbandry.

The convertible system is nothing more than the application of capital and labor to cultivation under a different system; and the difference between the mode of agriculture, practised in North and South Britain, lies in the method of that application. Under the convertible system, every field has its regular alternate share of cropping and manuring. In England,* one part of the farm is kept in grass, and

* Although the English system of farming is extolled among us, yet in some districts the management is bad; and in all districts, perhaps, excepting Norfolk, inferior to what it is in Scotland.

must on no account be ploughed, the other pays best by being ploughed and cropped perpetually.—The one farmer drains wet lands, and adopts every improvement any way calculated to advance his purpose, the other rejects any alteration on certain established modes of proceeding which must not be altered; the one spares neither labor nor expense in increasing the produce, the other will make no expenditure, under the belief that any other mode of farming than his own will not pay.—*Farm. Mag.*

Agriculture in France.

There is at present in France 123 agricultural societies, and 303 agricultural committees, where before 1803, there were scarcely ten, and they are constantly increasing. Every thing has been done by the present government to encourage agriculture in a pecuniary way, as well as by the different societies. The sum of 500,000 francs—nearly 100,000 dollars—has been placed at the disposal of the French minister of public works, for the encouragement of agriculture during the year 1838. There have been also several gentlemen travelling in Scotland, at the expense of the French Society of Agriculture, in order to examine the system of farming in that country.

Cheese from Potatoes.

Cheese of extremely fine quality is said to be made in Thuringia and Saxony as follows: Boil a quantity of potatoes, white ones are preferable, and after becoming cool, peel and reduce them to pulp, either by means of a grater or mortar. To 5 pounds of this pulp, which ought to be as equal as possible, add a pound of sour milk, and the necessary quantity of salt. The whole is kneaded together, and the mixture covered up and allowed to lie three or four days, according to the season. At the end of this time it is kneaded anew, and the cheeses are placed in little baskets, when the superfluous moisture is allowed to escape. They are then allowed to dry in the shade, and placed in layers in large pots and vessels, where they must remain for 15 days. The older these cheeses are the more their quality improves. A better kind is made in the same way, by mixing four parts of potatoes with two of curdled milk; and a still better kind, by blending two of potato and four parts of milk.

Useful Tables for Reference.

AN ACRE OF LAND CONTAINS

4 Roods, each rood 40 rods, poles or perches.
160 Rods, 16½ feet each.
4,840 Square yards, 9 feet each.
43,560 Square feet, 144 inches.
174,240 Squares of 6 inches each, 36 inches.
6,272,640 Inches, or squares of one inch each.

Breadths and Lengths of an Acre, in rods and perches and feet.

Breadth.	Length.		Breadth	Length.	
Perches.	Per.	Feet.	Perches.	Per.	Feet.
10	16		28	5	$11\frac{1}{14}$
11	14	9	29	5	$8\frac{11}{58}$
12	13	$5\frac{1}{2}$	30	5	$5\frac{1}{2}$
13	12	$5\frac{1}{13}$	31	5	$2\frac{15}{62}$
14	11	$7\frac{1}{14}$	32	5	
15	10	11	33	4	14
16	10		34	4	$11\frac{1}{17}$
17	9	$6\frac{27}{34}$	35	4	$9\frac{3}{7}$
18	8	$14\frac{2}{9}$	36	4	$7\frac{1}{2}$
19	8	$6\frac{13}{19}$	37	4	$5\frac{13}{37}$
20	8		38	4	$3\frac{9}{19}$
21	7	$10\frac{3}{14}$	39	4	$1\frac{9}{13}$
22	7	$4\frac{1}{2}$	40	4	
23	6	$15\frac{18}{23}$	41	3	$14\frac{73}{82}$
24	6	11	42	3	$13\frac{5}{14}$
25	6	$6\frac{3}{4}$	43	3	$11\frac{77}{86}$
26	6	$2\frac{7}{13}$	44	3	$10\frac{1}{2}$
27	5	$15\frac{5}{16}$	45	3	$9\frac{1}{6}$

Comparison of American with Scotch and Irish acre.

American.	Scotch.			Irish.		
Acre.	A.	R.	P.	A.	R.	P.
1	0	3	14.4	0	2	18.7
2	1	2	28.9	1	0	35.5
3	2	2	17.3	1	3	16.3
4	3	1	17.8	2	1	35.1
5	4	0	32.2	3	0	13.8
6	5	0	6.7	3	2	32.6
7	5	3	21.1	4	1	11.4
8	6	2	35.5	4	3	30.2
9	7	2	10	6	0	27.7
10	8	1	24.4	6	0	27.7
20	16	3	8.9	12	1	15.5
30	25	3	33.3	18	2	3.2
40	33	2	17.8	24	2	2.1

New Laborers in the Field.

We have received two numbers of the *American Silk Grower*, devoted to the Silk Business, and to Rural Improvement generally, published at Burlington, N. J. by Ward Cheeney and Brothers, a well executed sheet of eight pages, published monthly, at fifty cents per ann. Also, the *American Journal of Productive Industry*, devoted to Agriculture and the Mechanic Arts, an 8vo. sheet of 16 pages, published semi-monthly, at two dollars a year, at Maryville, Te. and conducted by Mr. M'Tew. We hail these as co-laborers in the work of usefulness, and wish them a liberal patronage. We think well of Mr. Cheeney and Mr. M'Tew's abilities, and hope much good from their labors in the public vineyard.

And last, though not least in our estimation, we notice the receipt of two numbers of a recently commenced periodical work, called "*The Educator.*" It comes to us from Easton, Penn.—is printed semi-monthly on a sheet of 8 quarto pages, at $1 per ann.—and is conducted by the president and two of the professors of Lafayette college; the first, Mr. Junkin, we believe, an American; the second, Mr. Cunningham, a Scotchman; and the third, Mr. Schmidt, a German,—all gentlemen of high literary standing, and, if we are to judge from the specimens before us, of strong minds and correct modes of thinking. Their objects, are to improve the mind and the soil—ours to improve soil and the mind. Our objects are so similar, in the end, that we hail this publication with a heartfelt pleasure, as a powerful and efficient auxiliary in the work of general improvement, and heartily commend it to the notice and patronage of all who are desirous of seeing our country blessed with an intelligent, a moral, a prosperous and an independent yeomanry. We intend, in our next, to give an extract from this work, as an evidence of the talents of those who conduct it, and of its tendency to promote the best interests of the American republic.

HOFFWYL AGRICULTURAL SCHOOL.—An American who has recently travelled in Europe, paid a visit, which afforded him high gratification, to M. Fellenburgh's school, in Switzerland. He saw there a student from New-York city, who informed him that there were several other boys in the school from the same place. "There were pupils on the ground," he adds "from Switzerland, Germany, France, Spain, Portugal, North and South America, and two from Tiflis." When shall we become wise and imitate the good, as we are ever ready to do the bad examples of our European ancestry. When shall *we* establish schools of scientific and practical agriculture for our sons? Whenever their importance shall be duly appreciated—and our citizens consult their true interests in endeavoring to promote the best interests of their country—of their whole country.

To Correspondents.

Some of our correspondents seem disposed to overrate our professional knowledge; and put to us questions which we either cannot answer, or which would require too much time and space to do in a satisfactory manner; and there are others who question us upon matters which have been already repeatedly and fully discussed in the Cultivator. We have received several specimens of soils and earths, supposed to contain marl or carbonate of lime, with requests to give their analyses, and to direct the mode of management and application. We have no chemical laboratory. The expense of procuring an analysis, in the many cases which present, would be heavy, without producing a corresponding benefit to the public—as marls and soils vary much in their relative qualities; and, besides, we possess no other scientific knowledge than any young or middle aged man may soon acquire by reading and observation—without the aid of schools. It is in agriculture as it is in the other arts—the head must work as well as the hands. We must put in requisition the faculties of the mind. We must read, reflect, analyze, compare, and try, what comes recommended to us as established truths; otherwise we cannot expect to derive that advantage from the study and labor of others which lies within our reach. It is the province of the hands to perform, and of the head to direct when and how to perform. Our schooling was very limited. We were brought up to a mechanical profession; and when, twenty years ago, we commenced farming, we were conscious we had every thing to learn, both in the theory and practice of husbandry. Our theatre of action was an unsubdued pine barren, by many considered incapable of profitable cultivation. Yet with great facilities for obtaining extra manure, our farm is under as profitable culture, in proportion to its size, as any in the vicinage, or, we believe, in the county. Our knowledge in farming has thus been acquired at an advanced period of life, by combining book farming with practical farming—the science with the art—and by adopting after close observation and a fair trial, whatever we found to be excellent in the practice and recommendation of others. We sought to profit by the suggestions of our own mind as well as by the labors of other men.

We have thus laid ourselves open to the charge of egotism, in order to show, that it is in the power of the young—of ALL—to become competent judges of the proper means of improving their farms and their fortunes, and of thereby enlarging the sphere of their enjoyments. The principles of science have a general application; yet the judicious application of these principles to practice depends upon a great many local contingencies which practice and observation can alone detect and modify. It is impossible, therefore, to judge of the defects of a soil, or the best means of improving it, without seeing, analyzing or experimenting upon it. The occupant is, or may be, or should be, the best physician. By keeping a journal of the operations of the farm—of the expense and products of the several crops and fields—the manures applied, &c. and by posting these annually into a ledger, to the several compartments of the farm, the farmer can, at any time, bring into view, the relative profits of his several crops and courses of crops—and can judge satisfactorily of the deterioration or increased productiveness of his soil. These accounts are as essential to the farmer as they are to the merchant or mechanic, and may be as easily so kept, that the farmer may, at the end of each year, know the profit or loss of his business, or of any branch of it.

We will, in our next, suggest some rules that shall have a general application, and which will enable the novice to judge of the composition of his soil,—of its defects, and the modes of improving it—and of the means of increasing and perpetuating fertility, by manures, the alternation of crops, draining, &c.

We offer the foregoing remarks, not to complain of those who interrogate us upon matters of husbandry—for we consider a desire for knowledge commendable, and the first step to improvement—but as an apology for the summary manner in which we have answered many of their interrogatories, and for our total neglect to answer others;—and to induce our correspondents to rely more upon the resources of their own minds, and the suggestions of their own experience. Agriculture is a business in which a man may continue to learn as long as he lives, even should his life be prolonged for centuries; and the more a man knows, the less vain is he of his knowledge; because, as he advances, the wonders of nature so accumulate upon his vision, and the means of improvement become so multiplied, that he is wonder-struck and humbled at his comparative ignorance. Knowledge is not the ultimate object of education; but it is the application of it to the useful purposes of life—to the advancement of public virtue and general happiness, that renders its attainment valuable. The man who thinks he can learn nothing in husbandry, must be a dolt, that is, according to Webster's definition, "a heavy, stupid fellow; a blockhead; a thick skull."

With these preliminary remarks, we proceed to notice several letters, in the order in which they lay before us.

EVIDENCE OF THE CORN CROP.

Mr. D. M'Neil, of Morefield, Va. advises, that he will be a competitor for our corn premium, and wishes to know what evidence we require of the product? We answer, his certificate of the fact, with that of a magistrate, that he is a man of veracity, and that his statement is to be depended on. Mr. M'Neil writes us a good letter, which evinces much zeal in a good cause. *A copy of the Cultivator will be furnished to the agricultural society of the Valley,* (South Branch,) AND TO EVERY OTHER AGRICULTURAL SOCIETY IN THE UNION, GRATIS—*on the application, post-paid, of the President of said society, accompanied with the assurance, that an agricultural exhibition has been held by said society during the preceding year, at which at least three hundred dollars have been distributed in premiums.*

CATTLE, PIGS, SHEEP, &c.

We have a letter of inquiry from R. G. Underhill, of New-York, in relation to pigs, one from P. St. George Ambler, of Va. in regard to the improved Short Horns, New-Leicester Sheep, &c. and several other letters in relation to stock. In the stock business we make no pretensions to proficiency. We are not breeders. Of course all we can say must be guess-work, or the opinions of better judges in these matters. In regard to "pigs for orchards," or any other mode of fattening, we can say the Berkshires are *good*, though we do not mean to say they are *the best*. As to the Short Horns, we have requested that Mr. Ambler be advised, and he may depend upon the facts which Mr. B. shall give him. In regard to the New-Leicesters among us, the pure blood are pretty much alike: the difference consists principally in the attention which has been paid to their breeding and keep, and to the selection of individual animals. The price of Mr. Bement's pigs has been stated in our present vol. by Mr. Bement; and the price of New-Leicester bucks may vary from $15 to $50, according to quality. This last remark is also in reply to the letter of G. H. Maccary, of West-Poultney, Vt. Thomas Dunn, of Albany, has as good as any, if not the best New-Leicester flock.

A VERMONT FARMER asks us many questions. We refer him to our preliminary remarks, and to our present and back numbers, for answers to such as relate to the turnip fly, to charlock, the spiked roller, to the culture of potatoes, to farm accounts, &c. His 250 acre beaver meadow, which he represents as dry and yet infested with sedgy grass, should be broken up, cropped, thoroughly subdued, and then stocked with timothy and other grass seeds. Sawdust is good for nothing as a manure till it rots, and is not worth much then. The name of a writer, however humble, will ever command more attention from us than an anonymous signature. No man should be ashamed of a desire to be better informed in his business.

MARYLAND FARMING.

We are not sufficiently acquainted with the farming practices in Maryland, to venture to direct "A Young Enquirer" how to manage his estate, which he advises us consists of 240 acres divided into three fields—a naturally good soil, susceptible of high improvement, with abudant resources of manure in peat earth and oyster shells. His object is to "*improve his farm, and make the most money in the shortest time.*" We propose that he

should substitute *ultimately* for the "*shortest time*," as more likely to lead to improvement. We advise our correspondent to make a jaunt of observation and of inquiry to the Patuxent, to Fredericks, to the upper part of Delaware, and to Pennsylvania—to Mr. Patterson in his own state, and to the Messrs. Reybolds, in Delaware, and to learn how the best farmers manage matters in those reputed good farming districts. We can only venture to make a suggestion, which is, that our correspondent confine his attention to the improvement of *one* of his fields only, availing himself of all his resources of fertility—till he has brought it into a high state of improvement,—and to stock the other two fields with cattle and sheep. For the course of crops best adapted to his object, we refer him to our remarks on alternating crops, p. 53 of this volume. When one field has been made to attain the desired fertility, attention may then be given to the second and third fields. The latter will be in progress of improvement by means of the farm stock, which will also contribute to enrich the first field. We lay it down as a rule that labor is far more profitable, when applied to *one* field in an improved and highly productive state, than the same labor is when imperfectly applied to *two* fields in an impoverished and unproductive state.

Our correspondent who makes the above inquiries, has appended to his letter the following note:

"Mr. J. Hathaway is certainly mistaken relative to brining wheat before seeded. I bought some this spring of very ordinary quality, soaked it in strong brine one night and part of the next morning, and limed it. It came up soon, and now looks tolerably well."

A PLOUGHING EXHIBITION AND SALE OF CATTLE

Was to take place the 1st of the present month, at Hoboken, under the direction of the American Institute. ☞ The notice of this exhibition came too late for our July number; and it is now too late for us to speak of it in terms which its importance would justify.

MARL.

The specimen of earth sent us by Mr. Fullerton, of Orange; as also the specimen sent us by a gentleman whose letter we have mislaid, and whose name and residence have escaped our recollection, are both marl, but the per cent of carbonate of lime which they contain, we have not been able to ascertain.

ON THE TREATMENT OF COWS BEFORE CALVING.

"A subscriber," who dates at Hoosick, asks whether cows, showing a flush of milk, before calving, should be milked or not?

When the udder is greatly distended, and indications of inflammation appear, cows should be repeatedly milked, particularly young ones, and the udders should be anointed with some cooling ointment, or olive oil, or unsalted butter. A neglect to do this often causes serious inflammation and injury. In old cows unaccustomed to this precautionary measure, evil is less to be apprehended. When tumours appear on the udder, a salve, consisting of one ounce of Castile soap, dissolved in one pint and a half of new milk, over a moderate fire, constantly stirring it till it be thoroughly incorporated, is a good application. An ointment prepared from the juice of the leaves of the stinkweed (*Datura stramonium*) mixed with hog's lard, is also recommended. When the inflammation, however, becomes violent, resort should be had to internal remedies. Where no indications of inflammation, or of tumours, appear, the udder may be left undisturbed.

ERRATA.—The reader is desired to correct two errors in the communication of "P." page 82. In the 10th line, for "substance and for the food of plants," read "substances *used* for the food of plants." In the 14th line, last paragraph, 2d column, dele, or strike out, "own" at the termination of the line.

CORRESPONDENCE.

The Salutary Influence of Agricultural Journals.

Whiting, June 25th, 1838.

HON. J. BUEL—Dear Sir—Having been a farmer all my days, I now, in the sear leaf of life, just begin to appreciate the advantages which the rising generation have over those who, like myself, have farmed it from *tradition*. It is a source of much gratification to me to see farming begin to take a stand, among the varied and multifarious occupations of this busy world, as a *scientific and honorable* employment.

Much of this change—and I hardly know whether it would be saying too much to say, is wholly owing to the untiring and indefatigable labors of a few agricultural papers in the country, among which the common voice of community sets yours down as the *standard work* at the present day. Without feeling the least disposition to derogate from the praise-worthy exertions of the New-England Farmer, a pioneer work—the Genesee Farmer, and others of more recent introduction, now in the full vigor of manhood, all have a strong claim on the gratitude, not only of the farmer, but the nation. I am much gratified to see the increased interest among farmers of patronizing agricultural papers, and frequently when the interesting subject of improving our farming occurs, in conversation among my friends, inquire—do you take the Cultivator? And being answered in the negative, say to them, just hand me a dollar now, and I will send it to Albany, with your address and that of your post-office, and at the end of the year, if you are sick of your bargain, I will take you papers and pay you back your money, noting to them at the same time, that it is more than probable that it will cost them a dollar or two more before the end of the year—that my son and many others had become so interested with the work, that before the end of the first year they had sent and purchased the back volumes. Much good may, in this way, be done to our farmers, to say nothing of the additional patronage it will give the publisher, and thereby enable him to improve the value of his publication.

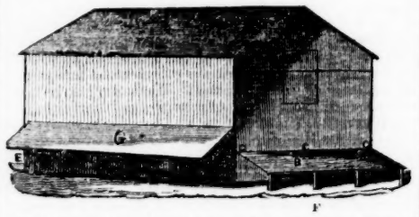
Deacon T. had taken your paper from the commencement, and feeling an interest for his neighbors, got some half a dozen to subscribe for the 3d vol.; at the end of the year he called on them to see if they would continue their subscriptions: one young man hardly knew whether he could, as it would now cost a *dollar*. Well says the deacon, "now look back and see if you cannot think of some improvement you have made from the information you got from the paper the last year, to the value of a *dollar*:" he reflected a minute or two, and replied—"I did save two lambs last spring from some hint in the Cultivator, which are now worth more than two dollars." He continued his paper. Some may be disposed to smile at the simplicity of our young farmer—let them smile if they please, but profit by it at the same time: it was a *genuine practical* observation. "I have saved enough on every acre of corn I have raised for years to *pay all the cost* of the paper, from introducing one implement, the description of which I found in the Cultivator,"* said a venerable,† practical minded friend of mine to me, as I took up his paper and was giving it a hurried glance.

"Any farmer, who will read any single number of the Cultivator attentively, may, by a judicious application of the information he may get, *save* or *make*, more than the whole vol. will cost him," said T. F. B. Esq. the other day, when talking of the importance of farmers taking agricultural papers: he is one of our most thorough practical farmers. I shall take much satisfaction in furthering the circulation of your paper. Yours respectfully. J. A. WALKER.

Portable Barn and Sheds.

MR. BUEL—Sir—The following cut is intended to represent a *Portable Barn* and *Sheds*, which I have lately caused to be erected.

[Fig. No. 39.]



The improvement consists partly in the cheapness of its structure and different uses to which it may be applied.

It can with little hindrance be moved from one field to another; the sills answer every purpose for runners; the end sills and sleepers are framed into the posts, as at A, three feet above the shoe or side sills, which makes a retreat or shed for sheep under the barn. The roofs G, on each side of the barn, are fastened to the posts by tenons, and supported with braces, as at D. The roofs at each end, B, are made fast at the end sills by three hinges C C C. When no use is made of the barn or sheds, or when it is to be filled with hay, the studs, F, are removed, the roof drops similar to the leaf of a table: and when it is desired to prevent winds and storms driving under the barn, the end which stands to the windward may be closed. The draft is fastened at the end of the sill E.

The extra expense of a portable barn, over and above stack yards, will in three years be remunerated in the extra value and saving of hay and labor.

It may be profitably used to improve the barren parts of pasture land as a summer house for sheep.

Yours, S. W. JEWETT.

Weybridge, Vt. June, 1838.

Millers' Tolls.

Rahway, N. J. June 18, 1838.

MR. J. BUEL—Dear Sir—Since your correspondent from Oswego has inquired what toll millers, by law, have a right to take for grinding grain? I have seen by the May number of the Genesee Farmer, and June number of the Cultivator, that Mr. David Walton, of Burlington county, N. Jersey, and Mr. John Westly Luff, of Spring Mills, Delaware, in justification of the millers' extortionate tolls, understand the science of taking toll better than weighing air, or at all events I would not be very well satisfied with their deducting 12 pounds out of every 60 of my wheat for fixed air. Mr. J. W. Luff presumes to make it appear that 60 pounds of wheat contain more than one bushel of loose air, which he cannot prove by practical philosophy. He may make it appear that one bushel of air may, by artificial power, be condensed into a very small compass, but it will not weigh any heavier than when it filled the bushel measure. And I further contend that if he gets more loose air in any species of grain than its circumference will contain, he will be obliged to employ some artificial power to aid nature in her wonderful and mysterious works of its germination. According to the Rev. David Blair's philosophy, under the head of pneumatics, in his experiments in weighing air, he found that it weighed 324 grains for every 1,000 cubic inches; and that it was 900 times lighter than water. Now before Mr. J. W. Luff can prove to my satisfaction that there is 12 pounds, or even 12 ounces, of fixed air in 60 pounds of wheat, he must first prove that the Rev. D. Blair knows nothing about philosophy, or at all events of that part of it under the head of pneumatics. If these gentlemen will take the trouble to make the calculation, they will ascertain that there is 2,150 42-100 cubic inches in a bushel; therefore, if 1,000 cubic inches of air weighs 324 grains, 2,150 42-100, or one bushel, will weigh one ounce and nine penny weights, but no more. I am under the apprehension that the millers in this part of the country have been studying and practising this new science of taking toll. Yours most respectfully,

WILLIAM A. STONE.

Schenectady, 28th June, 1838.

DEAR SIR—Jesse Degraff, Esq. a scientific farmer, on the north side the Mohawk river, just called me to inquire whether I had answered the criticism of Mr. Burnham, (in the Cultivator of this month,) on my observations on early sown grain, as he considered us at issue on the theory of plants exhausting moisture from the ground, and should look for my reply.

I acknowledged to him my want of care in the language used, shewing why early sown grain is favored in times of drought, above that sown late. I explained to him that it must be within the observation of every vigilant farmer, that early sown plants suffered less from the evil of early May and June droughts than those of late sowing. The roots become larger, extend deeper in the soil, whence they obtain more nutriment—through that and the shade of the increased growth of the plants, were protected from the rays of the sun, while those of late sowing became stunted and unproductive. That I had found clover seeds sown on naked ground, failed, because the sun dried the roots when small, and they perished: while those sown with grain were saved by the protection of the grain from the sun in dry weather, and succeeded. He was fully satisfied with these observation, as *he* had made similar remarks, and that they did not contradict the theory of Mr. Burnham, but that an explanation would be expected from me. Will this suffice?

In my communication on the liability of oats to lodge when sown on *strong* ground, and prevented by mowing, your printer said *stony* ground, which made nonsense.

Most respectfully,

DAVID TOMLINSON.

The Grain Worm.

St. Armand, L. C. June 26, 1838.

J. BUEL—Sir—The grain worm having done considerable injury to the wheat crop in this vicinity, for several years past, my attention has been called to the subject, and I think I have found a remedy. My way is as follows, viz: when the heads or ears of wheat begin to show themselves I sow about two bushels of slaked lime or good house ashes on an acre of grain, when it is wet with dew, I repeat the operation once in eight days, until the grain begins to harden and is out of danger. The philosophy of it is simple; the lime or ashes render the plant unpleasant to the fly, so that it will not alight upon the grain to deposite its young. My remedy is *prevention*, which is better than *cure*.

JOHN GERRISH.

REMARK.—We have tried a *single* application of lime, without any sensible benefit. What *repeated* applications would do, we are unable to say; but we doubt the benefit of any topical application, except it contains something offensive, in its odor, to the fly.

We must have Knowledge.

That our farmers may carry into their occupation a "zeal according to knowledge," they *must* be better informed on subjects connected with agriculture.

It is not sufficient, in this country, that a few scientific men direct their attention to it. They, indeed, may, and should lead the way. But they cannot effect so much at once, as in other countries where the many are more under the control of the few.

Here it must be a gradual business. The pioneers of improvement can instruct and influence by precept and example those with whom they come in contact, and thus in time the whole community may be reached, "as the small pebble stirs the peaceful lake." And when this is once done, our intelligent population will turn it to much better account than if they had adopted improvements, they knew not wherefore.

The farmer who avails himself of all the knowledge within his reach, can generally turn it to good account. Every improvement in his business, made in any part of the country, is at once before him for his inspection and adoption. Each hint of the most gifted minds is made to subserve his interest; each new implement to minister to his ease or advancement. New varieties of stock are brought to view, for his selection—new plants solicit his culture. But above all, this knowledge gives him the power of discrimination—qualifies him to select judiciously—and prevents him from being imposed on by pretended improvements.

Plodding ignorance may indeed amass wealth but it is not so common as with the well-informed. And when this *is* the case, it is generally done by a "mill horse" round of toil and vexation, without knowing or caring for any thing beyond the narrow circle in which they

*The Cultivator. †Late Hon. Henry Olin.

move. The present is emphatically an era of improvement; but to the ignorant man all the advantage to be derived from this improvement is lost. Improved modes of culture may render land doubly productive; labor saving machinery lighten the fatigues of labor; change of circumstances unfold new sources of profit; *all* be delineated with fidelity, and spread before the public by the winged messengers of the press; but to him it is a sealed book. He has imbibed a prejudice against "book farming," and nothing short of a miracle will turn aside his steps from the beaten path of his fathers; nothing make him believe that those "gentlemen farmers," who sometimes hold a pen as well as a plough, can instruct *him* who has *worked* at farming all his lifetime.

Nor are the moral and religious tendencies of agricultural pursuits, in connexion with a good degree of knowledge, to be overlooked. In no branch of science, in no employment of art, are there more numerous or interesting circumstances to call forth the sympathies of the soul, to purify and exalt the best feelings of the heart, to direct attention to the objects of nature, and through them to nature's God, than are to be found in agriculture. To him, who in every opening flower, and ripened fruit, in every sighing breeze and singing bird, and purling rill, can behold and recognize a bountiful Father, sources of enjoyment are continually multiplying.

He who can behold the fertile earth in spring beautifyed with flowers, and carpeted with springing grass; the lavish abundance of autumn, its delicious fruits and golden grain, and feel his breast expanded by no joyful emotions, his heart quickened by no sentiments of gratitude to the great Author of all these blessings, is surely neither to be envied nor admired. If "the undevout astronomer is mad," the undevout agriculturist is doubly so. S.

Dublin, (N. H.) June, 1838.

To increase the Wheat Crop.

It is not the writer's intention to dictate, nor can he claim to have imitated the Emperor of China in even annually giving demonstrations of his veneration for the plough, by entering the field to follow and hold with his own hand that honored and useful implement of agriculture; still he considers his observations for ten years past over the wheat growing district of Jefferson county worthy a passing notice. Winter wheat may be considered the staple grain crop of the middle, western, part of the eastern and southern states; in northern latitudes, it has to encounter many enemies. No doubt the one most formidable, is the prevailing winter or spring night frosts, and thawey drying days, the ground being left in a flat state or in lands too wide and without sufficient cross furrows to carry off the surplus moisture; large fields are thus drawn by the frost and wilted by the sun. It has been observed, and I assert the rule to hold good, that wheat ploughed in from 20th Aug. to 10th Sept. in narrow lands, shallow furrows and well cross drained, to a great extent escapes the injury of the heaving frosts of winter and spring; the ground preserving a more uniform moisture sufficient to facilitate a proper growth, and in clay soils does not become baked. Good crops is the consequence. I would recommend ploughing in wheat in lands of six furrows wide, (about six feet,) leaving the furrows between the lands open, making cross furrows in all low parts of the field, that it may be properly drained. Some object, as it leaves the ground rough for gathering the wheat, and subsequently the grass, if it is seeded down; but I would not seed down upon winter wheat when the frost so materially affects it. Seed with spring crops.*

Many farmers do all the *hard work* of raising a good crop, the operation of putting in the seed is done slovenly, as all work is done in a hurry and without care. Some skill is requisite to plough in wheat in the manner here suggested. The furrows should be straight, so that the last one will be of even width and have no balk. It is much to be regretted, that many, priding themselves upon their spacious acres and *chance* fine crops, do not possess the knowledge of ploughing well, or at least omit to practice it with skill. How beautiful to the observing traveller appears a field of wheat newly sowed, upon ground in all respects properly prepared and ploughed in, as here suggested; how agreeable to the farmer to hear, borne upon the wind, the traveller's remark, "This man is a farmer, his work is done neat." Such an one is "a farmer." He needs not sow a second time but gathers a crop, not in patches but *a full one,* 25 to 40 bushels per acre. This *notion* some have of leaving wheat land flat to make better harvesting of that and subsequent grass crops, evidently has reduced the wheat crop millions of bushels annually.

* The winter killing of wheat is to be principally ascribed to the expansive power of frost upon a wet soil; and the evil is annually increasing, by the diminution of the vegetable matter in new settled districts, by hard cropping. This diminution causes the soil, especially where clay predominates, to become more compact, and consequently more liable to be affected by frost. The remedy suggested is a good one; and yet if furrow draining was introduced, the ridges might be laid 18 or 20 feet broad, and thus the objection to six feet or narrow ridges obviated. The land would thus be always comparatively dry, and in condition to work early, and the crops would be certain, and upon an average one-third more, on a field of stiff clay, than they are now. An increased product of ten bushels an acre, would remunerate for the outlay in two or three years. We *know* that under draining almost effects miracles.—*Conductor.*

TO BEAUTIFY THE COUNTRY.

Since the settlement of the American continent the primitive forests have been removed from vast portions of its fertile and diversified surface. By a few, primitive trees have by chance or accident been suffered to remain near intended dwellings and by the way side; many have planted their tree in early youth, and in age reclined beneath its grateful shade. Such are now more dear to descendants, recollecting their enjoyments in this respect were provided for by time honored ancestors.

The "new beginner" in a wilderness country seeks to remove the impediments to cultivation. In most cases not a tree is suffered to grace the yard of his isolated log cabin; his fields are rendered alike barren as to natural ornament. Now it is quite as easy in clearing new lands to leave a few trees of moderate size and in suitable places upon the road side, about building grounds, and clusters where division fences are intended. Thus we may have beauty without cost, and that too at least twenty years in advance of planted trees. It may be proper here to remark, that such trees being *natives,* will uniformly *live* if left uninjured, which is less certain with *planted* trees; in this way you may have a variety, and every tree standing upon soil the best adapted to its growth. But reader, if you have a farm without trees to *leave,* by all means *plant* and raise them. Natives of the farm look well; scarce any are better.

In suggesting this mode of raising good crops of wheat and of beautifying the country, I am aware neither is new with many tasty farmers; but the fault or neglect, if it may be so termed, prevails to a great extent in both respects.

Let him who prepares his ground well, sow clean seed in season, *and plough it in* as by the writer suggested; or him who is by these suggestions incited to save from the devouring axe a few trees for his shade, place the good or evil consequences to the account of

OLIVER CHILD.

Carthage, N. Y. July 6, 1838.

P. S. As the Cultivator is not read by but few of the active farmers, comparatively speaking, I have to request that the good suggestions every number is made to contain, may be treated as Indian history, handed from one to another in conversation, and from father to son transmitted to posterity. Country papers dry of news, would greatly improve the value of their sheets, by more frequently copying essays upon agriculture.

Remarkable abstinence in a Calf.

Washington, D. C. July 13, 1838.

JESSE BUEL, Esq.—Sir—A fact, singular to me, came to my knowledge a day or two since, which I cannot forbear communicating for the benefit of such of your readers as may be curious on such a subject.

A gentleman sent his cow, among his other cattle, into my brother's pasture, a few miles from this city, to feed. After a few days, thinking the cow near the season of parturition, he had her driven up into his barn-yard. She remained in the yard with other cattle nearly ten days, when, no signs of "labor" appearing, the owner began to wonder at the cause. It finally struck him that the cow must have calved while in the pasture. He therefore, after the laps of *eleven* days, sent the cow back to the pasture, and his wonder ceased on perceiving the cow hastening to a little copse, where, much to the gentleman's surprise, he found the calf *alive,* but in a most miserable emaciated state. The mother revived her offspring, with the help of the owner, after a little time, and strange to say, the little creature is doing apparently as well, as if he had been ushered into the world under different circumstances and attended with ordinary care.

The cow was fat, and we may hence infer that the calf, when first born, was in good condition. It is probable it never suckled until after the lapse of the eleven days.

I have no time for comment.

In haste, very respectfully, your ob't servt.

THO. ALLEN.

The Strawberry.

New-Haven, Conn. July 4, 1838.

Hon. J. BUEL—Dear Sir—I am glad to see that you propose giving, in your next number, some directions for the culture of the strawberry. Before preparing your article, I take the liberty to suggest for your inquiry, whether it is *necessary* to intermix the two sexes.* If it is not, great trouble, expense and eventual disappointment will be spared to the cultivator, by planting females only. I have cultivated what is here called the Chili strawberry, which has no stamens in its blossoms, for nineteen years, wholly by itself, without any mixture of males; and have never failed to have fine fruit. For five years, I have cultivated, also unmixed, the Methven and a seedling strawberry, both with female blossoms only, with entire success. It is true, I have had, at the same time, in my garden, a few plants of another strawberry, whose flower is of both sexes, but at a distance from the rest, and so few in proportion to the others, (say one square rod in eighty,) that I can hardly suppose them to have had any fructifying influence.

From these facts, I have been led to doubt the necessity of mingling the different sexes. That would doubtless be indispensable to the perfection of the *seed,* but please consider whether it is to the perfection of the *fruit.*

We have analagous examples of perfect *fruit* from female plants alone, in the fig, and if I am not mistaken, in the mulberry, at least the black mulberry.

I make these suggestions with no small diffidence; for I know the universal opinion of nurserymen and gardeners is against me. But if I am right, the cultivation of strawberries may be greatly simplified, and success will be certain to the careless as well as the vigilant—an important consideration, especially to the farmer who has other cares enough upon his hands.

Yours, &c. NOYES DARLING.

P. S. My practice has been invariably to plant out my strawberries in the *spring.* I lose none by dry weather; the perennial weeds and grasses are easily extirpated by the hoe the summer following; and the next year brings the beds into full bearing.

* We possess no evidence that this is necessary except with one variety of the hautboy—but we think the rule will apply to some other varieties of this fruit.

National Agricultural Association.

Lake C. H. Ia. June 19, 1838.

J. BUEL, Esq.—Dear Sir—I cannot but feel a proper degree of pride to perceive what universal approbation, my proposition for an "American Society of Agriculture" meets with. Not pride for myself, because I happened to be the first to make the proposition; but pride for my country, to perceive that there is so much of the true spirit yet alive in the land. I have received several letters and papers containing notices of the proposition, which indicate to my mind, that "something can be done." Organization is all that is lacking. That "must be done," and then the last affirmative in the proposition is sure to follow. For if all the friends to agricultural improvement are once united, "something WILL be done, to elevate the character and standing of the cultivators of the American soil." There is a charm in the very name of "The American Society of Agriculture," which is sufficient to enlist thousands. Something so ennobling in the thought of being known to be one of the members of such a union of all the most eminent agriculturists in the whole country, moved and actuated by one impulse, and mutually interchanging their views, experiments, improvements, and newly acquired information.

What an immense influence would this have upon the whole country. Look at the influence upon mechanics of the American Institute. Greater still would be the influence of such a union of agriculturists. Look at the influence of agricultural schools and pattern farms. This would be one great agricultural school upon a thousand pattern farms, the annual exhibitions from which would do wonders towards inciting others to go and do likewise.

We cannot look to legislative action, for that encouragement and protection which the agricultural interest is entitled to, until the tone of public feeling is further awakened to the importance of the subject, by the immediate action of the cultivators themselves, and until the subject can be made popular, and then it will lack no assistance.

Can any plan be devised that will have a greater tendency to create that popularity than the formation of the "American Society of Agriculture?" If so, let it be done. I enrol myself one of its friends and supporters. But the time is fully come that "something can be done," and I shall lay my grey hairs sorrowing in the grave, if the whole country does not respond, "something must, something SHALL be done," and done quickly, to promote the great, and good object in view.

Yours, &c. SOLON ROBINSON.

On Curing Clover Hay in Cock—Heaves in Horses.

Queens County, July 4, 1838.

SIR—There is one objection to your plan for curing clover hay in grass cocks, which has always struck me as insurmountable, viz: *that it must be so long out o' doors.* In the Cultivator for this month you say, "leave them (i. e. the grass cocks,) undisturbed at least 48 hours." If we could be certain of good weather, this would do well; but suppose that before the 48 hours are expired, we get a heavy shower of rain, what then? Why the grass after a pretty good drenching, is to be thoroughly cooked in the sun, during which process, its fragrance will most assuredly take wing, to return no more; and next a considerable portion of the leaves will crumble off, before it reaches the mow. My plan has long been to rake and cock in the afternoon what was cut early enough in the same day to have taken a nice wilt—next morning as soon as the dew is gone, these cocks are turned over, and if necessary opened a little. In two hours they will do to cart. Hay made in this manner, saves perfectly, and is of the very best quality and appearance. If there happens to be a brisk drying wind through the night, the cocks will sometimes do well to cart without opening. I may be mistaken, but I cannot help believing that this process is, on the whole, preferable to the one which you recommend. I know it is not very grateful to have our cherished and proclaimed opinions, successfully assailed; but I have mistaken your character, if fair and manly discussion, is not invited by the Cultivator. We will change our subject. Do you know of any effectual remedy for heaves in horses? If not, perhaps you may consider what follows worth noticing. I have a valuable horse—one of a pair—which threatened more than a year ago, to become utterly useless in consequence of this complaint. At the expiration of the last grass season, I was induced to try top-stalks instead of hay, and the result has been that the animal is entirely relieved, nor have I the

least expectation, that the disease will recur to any extent, so long as this diet is adhered to. Permit me to add, that I have for years, been in the practice of giving my horses each an ounce of fine salt every other day: and that I have good reason for believing that their health is greatly promoted by it. In reference to stalk-fodder for horses, I should like to inquire, through your paper, of southern gentlemen, whether in that part of their country where hay is not made, they ever have heaves amongst their horses. If they do not, I shall consider my experiment conclusive.

Very respectfully yours, A SUBSCRIBER.

JESSE BUEL, Esq.

P. S. Our crops of hay will be rather light. Oats were checked in mid career, by a sharp little drought which we had last month; and from present appearances will be nothing to brag of. Wheat *has* looked prodigiously fine, but we are now a little apprehensive of rust. Corn, what the worms have left, is very promising. In sandy soils, these worms made great havoc, while in loam, little harm was done. The difference here named, is obvious; even in the same field, some of our corn has been planted over three or four times; the last time we used the Dutton, hoping it may mature notwithstanding the advanced state of the season.

REMARKS—The objection of our correspondent is more plausible than substantial. The object of curing clover in grass cocks, is to preserve its intrinsic good properties; and although the exterior of the cocks may become blanched by a long exposure, the interior will not suffer deterioration, if they are properly constructed, by a week's exposure, but will be bright and fine. And it makes but little difference on the score of economy whether the hay is housed the second or fifth day after cutting.

We have this year varied our practice somewhat, and we think to our advantage. The grass cut in the forenoon, has been turned in swath directly after dinner, and put into grass cocks the same day. If rain has threatened, the cocks have been opened the second day, and the hay finished; but we prefer to leave them to the third day, when a slight opening, to evaporate the external moisture, suffices. The grass mown in the afternoon is turned the same day in swath, or if not wilted enough, in the forenoon of the second day, and in the afternoon put into cocks. We deem it important, 1st, that clover should stand in cocks some time in order to equalize the moisture—to sweat—that is, that the moisture contained in the thick stems may have time to disseminate itself upon the surface, and into the thin leaves and blossoms. If a slight fermentation takes place in the cocks, so much the better; as the hay, in that case is not likely to undergo a second fermentation in the barn. Secondly, that the curing process should be carried on as much as possible without the aid of the direct rays of the sun, which certainly impair its nutritive properties. Expose a lock of clover two days to the direct influence of the sun's rays, and it becomes blanched and valueless, and cattle will reject it.—*Cond. Cult.*

Draining—Prairie Barrens of Ohio.

Chillicothe, Ohio, June 12, 1838.

J. BUEL, Esquire—I am much pleased that you have so thoroughly taken hold of the subject of *draining* lands. It is a subject which has been but little thought of in this section of the union, though one in which we are so deeply interested; and I am confident that some of our lands, heretofore but little thought of, will by this operation be found among the best in the country. We have done but little in top draining; and under draining, to my knowledge, has not been introduced. On many of our lands in the Scioto valley, I presume it would answer a good purpose; but the scarcity of stone seems to be a difficulty in the way of its introduction, pottery would be too expensive, and wood, though sometimes used in Europe, I fear would be of too short continuance, as it rots sooner than in Europe or in the United States east of the Allegany Mountains. We must, therefore, I presume, be principally confined to top ditches. By the application of this, I am confident, that some of our lands, heretofore but lowly valued, will be found in *reality*, to be among our most valuable. The greatest quantity of our land in this section of the state, which needs the drain, is high and very level; a great portion of it bordering on the heads of the streams, and in many places, with the naked eye, you could scarcely decide, which way the water runs. The channels are in many places to a considerable distance closed. In all these places there is sufficient declivity, as soon as a channel is opened, to carry off the water. I have had a little experience of the effect of *slight* top draining upon a stock farm, which I have, called Wahoo Glade, about 24 miles west of Columbus, in what is called in this country the "Barrens." It consists of prairie and very open barrens. The prairie is a deep black soil, founded upon a hard pan or stratum of dark yellow clay and limestone gravel; and the barrens a dark yellow clay soil. When I commenced the farm, my principal object being grass or grazing, I went to work to put the prairies into tame grass, without breaking the sod. The large glades were then considered so wet that corn or grain could never be raised upon them. This I find a great mistake, and one which has cost me money, and the sacrifice of much time in the improvement of my farm. Experience has taught me, that those glades by *proper draining* are capable of making some of the best and most durable tillage lands in the country; and that the plough is the best instrument for subduing the prairies and barrens, and for putting them into tame grass. I manage it in this way; I run a *large* ditch through the glade, near the natural direction which the water takes in passing off. Then, before breaking the sod, I turn about three furrows down each swell to the main ditch, and throw them out about 18 inches deep, so as to make a flaring passage or ditch to the main ditch. I then commence breaking up the sod, extending my lands across those swale passages, and making them only from one to two rods wide, and cut about nine inches deep. This throws the face of the land into ridges, and gives drains to conduct the water into the swale passages, and thence into the big ditch. The next year observe the same order of ploughing, and keeping open the swale passages, and so on until laid down to grass. After it is laid down to grass, the swale passages sward over, and there is no loss of the use of any of the land. After thus preparing, and throwing the surface of the land into the aforesaid shape, I can raise upon it a good crop of corn, wheat, &c. After laying it down, it swards over thickly, and the grass seems to be of a more substantial quality than the tame grass produced upon the land before draining and ploughing.

I have suggested to several gentlemen of mechanical genius the great utility of a machine for digging ditches,* but have never seen any invention.

Very respectfully, &c.

NATH. SAWYIER.

Singular Effects of Gypsum.

J. BUEL, Esq.—Sir—No doubt your are pleased to hear any remarks that will benefit the agricultural community. I therefore remark, that on Saturday the 16th of this month, we commenced applying gypsum to our corn; we commenced late in the afternoon, and only plastered about one-third of the field, which contains about 4½ acres. The ground was dry when we applied the gypsum. On Sunday, we had a very heavy shower. On Monday we plastered the remainder of the field. There was a drain that led from the highway into the field, which conducted the water into it. A few perches of the land were in puddles; but when the last plaster was applied, the water had subsided, but yet the ground was soft where the water had stood; in those spots we soon after discovered that the corn was evidently perished! and all over that part of the field last plastered turned yellow, ceased to grow, and now looks miserable. That part first plastered looks black, thrifty, and is twice the length of the latter! It is to me a full evidence, that gypsum applied to wet, or moist land is a damage in lieu of a benefit; and never ought to be applied to corn after a rain, until the ground gets dry and warm. It is proper to observe, that the two parts of the field are about as equal as to moistness as you will find generally on high, hilly land; not any of it wet, but dry land. The odd appearance of the corn commencing at a row, and continuing through the field, is so conspicuous that people travelling by, will stop, wonder and inquire. No doubt it is generally understood by farmers, at least by those who have read the Cultivator, that gypsum is a damage applied to wet, or moist land.† The circumstance of the application of it, evidently proves, that it never ought to be applied, even on the dryest land, even in time of a drought, when there has been a dew during the night, until the grass, if applied to mowing or pasture lands, or grain, until the dew be wholly evaporated from the earth. I should say not till afternoon. I am convinced the usual practice of applying it promiscuously, is the cause of farmers saying that it will not have the same effect every year. It is common to commence early in the morning, before the wind rises, and also to escape the heat of the sun, having no consideration to moist effect. Henceforth I shall never apply it only when the ground is dry and warm. I am, sir, yours respectfully,

JN. SEELYE.

Sherman, Connecticut, June 25, 1838.

The Times.

AGRICULTURAL BRETHREN—For some time past, we have seen much written, and heard much said, about scarcity of money and hard times. Great complaints have been made by merchants, manufacturers and mechanics, in every town and state, in this extensive country; and no doubt there has been much difficulty and cause for alarm. The currency has been, and is still, much deranged. In consequence of this, our money concerns have been brought into such a state, that confidence between man and man has been, in a measure, lost. On this account, a vast amount of money has been kept from circulation. On the eve of our late prosperity, many in their eagerness to become rich, took, as it were, a leap in the dark. They were not apprehensive of a change of times, and undertook many things without counting the cost. In this way, thousands have been ensnared; and from their toils have not been able to extricate themselves. Though I deprecate this change, and pray not for a recurrence, yet, in many respects, I think it will eventually be for the good of the people. The change of times has brought folks to see on what they must depend for subsistence. I hope it will have a tendency to check wild speculation and headlong extravagance. These had become very prominent, and needed a powerful restraint. The times have tried men, as a severe drought tries our wells. When this happens, wells, without good bottoms, fail. So fail men in a great money pressure. These things are bad; but may they not be productive of much good in after life, and to future generations? Will it not make them more cautious and provident? I very much rejoice, brethren, that I am able to say, that no class of people have withstood the times so well as the farmers. "The rain descended, and the floods came, and the winds blew, and beat upon their house; and it fell not: for it was founded upon a rock." Yes, we have irrefragible evidence, that agriculture is the groundwork of living. In the many complaints made by the people, we cannot altogether exclude the farmers. We occasionally hear some exclaim, "O tempora!" It is true, they have been somewhat affected by the currency, and the seasons of late have been rather unpropitious; yet, as a whole, the tillers of the soil have had great occasion for thanksgiving. Providence has frowned, but she has also greatly smiled. Almost every thing that the husbandman has furnished for the market has commanded an enormous price. While labor and articles of merchandise have been falling, articles of living have been rising. I very well know, that some of our brethren have met with embarrassments, but I believe it was not so much owing to the *times*, as *other* causes. But on thorough investigation, I find that this trouble is brought about very much by conforming to a *cruel* and *tyrannical fashion*. Yes, it is a stubborn fact. Extravagant fashions are introduced, and folks, whether they be *rich* or *poor*, must follow them. Consulting ability is out of the question. As I was following my plough, the other day, my meditations were disturbed by the cracking of a whip, and rattle of a chaise. Raising my eyes, I saw a young man passing in the road, in the greatest possible style. Who can that be, said I? Has *Crockett* come among us? Moving in such uncommon style, I had the curiosity to find him out. And, on inquiry, found him to be a man destitute of property and the materials that constitute a good character. By following the extravagant fashions of the day, he became embarrassed; and embarrassment led on to bad habits. He expended much to decorate the *body*, but *nothing* to improve the mind and heart. Here he was unwise. On this rock thousands and tens of thousands split. To this thing, brother farmers, I wish to direct your attention. Is it not a lamentable fact, that we are too much under the dominion of this *hydra, fashion*? Do not these wild extremes *injure* and even *shipwreck* a vast many? We, as a body, can boast of a *competence*, but not of *affluence*. It is not in our power to do as some do, and, if it were, it would not be proper to do it. Persons of real merit appear much the best in a plain, neat and simple dress. "Loveliness needs not the foreign aid of ornament; but is, when unadorned, adorned the most." Simplicity of living is far preferable to epicurism. A snug, decent style of moving is much more commendable than extravagance. Would it not, brethren, be well for us to retrench our expenses, in some particulars, and do more for the improvement of the mind and heart? While we are providing for ourselves and households, and improving our farms, let us not forget the cultivation of the mind. Let us not forget the minds of our children. Laboring people may be reading people. Laboring people may be intelligent people. In this land of free schools and exalted privileges, let no one say (of common intellect) that he cannot get a good education. For every thing there is a time and season. There is a time for manual labor; a time to eat and a time to sleep; so there is a time to improve the mind. Farmers may read much every day, and digest it when about their work. There can be no reasonable excuse offered, why they should not progress *daily* in useful knowledge. I contend that a man may accumulate property as fast, to read some, every day, as to be all the time plodding. Likewise, that a student may labor some with his hands, without detriment to his education. This alternation, experience, (the best of teachers) has proved to have the most salutary effect. It is absolutely necessary, that both body and mind be exercised, in order to be healthy. It is a pleasant consideration, that while the manual laborer is resting his wearied limbs, he may be improving and enriching the mind. That while the student lays aside his books, to relieve the mind, he may, by manual labor, be invigorating the body. Thus, has a kind Providence ordered things for our happiness and interest. And it is astonishing, that people do not more regard her dictates. I have written some, respecting the tyranny of *fashion*. I am very sensible, that people do not consider, what *dupes* it makes of them. How it picks their *pockets*, beggars their *families*, sterilizes their *minds*, and makes them perfect *slaves*. I hope the time will soon arrive, when we can say the times are changed, and we are changed with them.

AN AGRICULTURIST.

Westborough, Mass. June 1838.

Under-Draining.

Countsville, S. C. July 8*th*, 1838.

HON. JESSE BUEL—Dear Sir—I again intrude with my queries. I have a wet lot of land in which, on a line of springs beneath the surface, I have cut a ditch which has not absorbed the water as I anticipated. My intention now is to underdrain it. As stones are not in any abundance about the place, and tile not to be procured, I wish your advice as to whether an underdrain, constructed of boards of good pitch pine, (which I can procure in abundance,) would serve to carry off the water, and render my land arable? These boards will last, perhaps, a century, when excluded from the air. How would it answer to lay two straight logs and cover the top with a board? As I *have never seen an underdrain*, on a farm, I would respectfully solicit your valued opinion on these matters. I shall be mindful of

* A machine of this kind has been patented by a gentleman near Baltimore, and one has been sent by Mr. Ellsworth to the valley of the Wabash for trial.—*Cult.*

† We have not supposed that gypsum is a *damage* to wet ground, but merely that it produced no benefit.—*C. Cult.*

the instructions which you gave to my queries in the July Cultivator. I am truly yours.

A. SUMNER.

REMARKS.—If the pitch pine boards or plank of South Carolina will last a century under ground, they will constitute an excellent material for underdrains—and we should use them to the exclusion of logs. Let the top of the box be covered crosswise, and not longitudinally, with plank, and take care to sink the drain low enough into the impervious stratum, if practicable, to catch the water coming from above, and to fill the lower portion of the drain with porous materials, that the water coming from the higher ground may settle into it and pass off. If spouts or springs rise in the low ground, these fountains must be reached and conducted off by underdrains; and if the wet lot is large, cross or diagonal drains may become requisite.—*Cond. Cult.*

Beat this, Eastern Farmers.

MR. J. BUEL—Sir—I have noticed in some of the numbers of the Cultivator, what your eastern farmers call brag crops, or raising a great quantity of grain on a small piece of land. I will give you a statement of one or two crops of wheat, &c. that have been raised in this vicinity the last year. A Mr. Arland, who emigrated from N. Y. to this section of the country last season, rented 40 acres of land adjoining the town of Dixon, and the following crop was raised by himself and wife, (by the way he is a German, and the women you know, as well as the men, are cultivators of the soil.)

20 acres of corn, averaging 40 bushels to the acre, which sold for 75 cents per bushel, making	$600 00
15 acres of oats, averaging 35 bushels to the acre, which sold for 62½ cents per bushel, making	328 00
2 acres of spring wheat, which produced 82 bushels of good clean wheat, worth $1.77 per bushel,	143 00
300 bushels potatoes, worth in the fall season of the year about 37½ cents per bushel,	112 00
What was sold from his garden amounted to something like 50 or 60 dollars, say	60 00
Making in all the sum of	$1,243 00
For the use of this 40 acres he paid $4 per acre,	$160 00
His own labor during the raising and securing the crop, also his wife, is worth	300 00
Paid hands during harvest, threshing, &c.	90 00
	$550 00

Making a clear profit in six months of the beautiful sum of $693.

Who would not be a farmer on Rock river? The above is no exaggerated story, the facts are known to all who are acquainted with the farm and the farmer who produced the crop.

Now Sir, will you be kind enough to turn the other ear, and I will stuff that with such a crop of wheat as none of the eastern farmers can boast of. A gentleman by the name of Saml. Reed, living in Buffalo Grove, 12 miles N. W. from this place, had a piece of wheat of 14 acres; shortly after harvest he threshed out one acre of this piece, and it produced *fifty bushels* of good clean wheat. I happened there at the time he was threshing. He has since informed me that the whole piece averaged 50 bushels to the acre, making in all 700 bushels. This wheat was sold for $2 per bushel, a great part of it for seed, he being one among the best farmers of our country, and very particular about his seed. Is there a farmer in any of the New-England or Eastern States can raise 700 bushels of wheat from 14 acres? Think of this you that are toiling among the stones and stumps, and pull up stakes, come to Rock river and raise wheat, get rich in ten years, and live on the interest of your money the rest of your life.

A SUCKER RAISED BUT YORKER BORN.

Dixon Ferry, June 25th, 1838.

The Curculio.

Scottsville, Albemarle Vir. 5th July, 1838.

SIR—I like a good idea, come from what source it may. A few days since, a stage coach companion and myself were comparing the relative advantages of our respective regions of country. In speaking especially of the peach and apricot—which with us is barely worth cultivation, being destroyed by the insect, which saps the tree at the foundation, and I presume perforates the fruit and renders it gummy. He informed me that a remedy was in practice in his neighborhood, which very effectually prevented the depredations of this relentless foe to our trees. It is simply paving around the roots of the tree, so as to prevent the insect getting below the surface of the ground. This may be done in a variety of ways: with small stones, using a wooden box to answer as a curbing, extending some 12 inches from the root of the tree: by the application of a well made mortar of lime and sand: or by sawing a hole in the centre of a wide plank, fitting it closely to the tree, then filling the interstices with putty: or, lastly, by what I regard the best plan—mixing tar and sand, to a proper consistence, excavating the earth to the depth of two inches, twelve inches around the tree, then filling up the excavated portion with the cement—this, with a trowel, can be smoothly laid, and accurately adapted to the body of the tree. Whether the theory be correct I know not: there is plausibility in it; it is to some extent new to me, and he informs me unpublished, so far as he knew. If the idea is worthy of notice you can use it; if not let it take the fate it merits. Your most ob't se't.

J. BUEL. G. M. LEWIS.

REMARK.—This preventive, if efficient, can only be adopted on a limtied scale. But we doubt its efficacy. The curculio, which does the mischief, is a winged insect, with locomotive powers. Hogs and poultry, which destroy the insect, are the best preventive. All stone fruits are subject to a like calamity, though in a less degree.—*Cond. Cult.*

Hoyt's Improved Patent Drill Barrow,

Operating upon the principle of keeping the seeds constantly stirred up at the bottom of the seed box, and forcing them out, instead of leaving them to fall out by their own gravity.

Description of the Cuts.

[Fig. No. 40.]

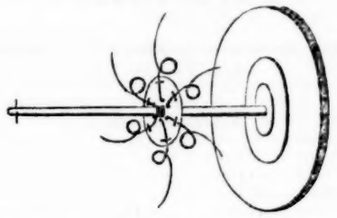


Fig. 40, an iron shaft, ⅜ of an inch in diameter, 7 inches long: on one end a double pulley and six springs or arms, of iron or steel wire, attached.

[Fig. No. 41.]

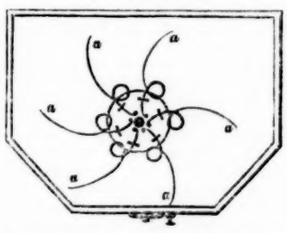


Fig. 41, seed box, of wood, 9 inches long, 7 inches deep, 5 inches wide, represented with one side removed, to shew the situation of the springs or arms inside of the box.

[Fig. No. 42.]

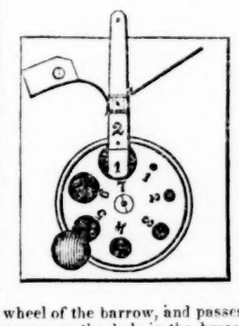


Fig. 42, bottom of seed box of tin, attached to which by a screw in the centre is a brass wheel, 2 inches diameter, 3-16 of an inch in thickness, with holes of different sizes, in the outer edge numbered from 1 to 7: this wheel turns on its centre, and the hole to be used is turned exactly to the centre of a large hole in the bottom of the box, and secured by a thumb screw; the shaft is set in motion by a band from the running wheel of the barrow, and passes the spring arms *a a a a a a* across the hole in the brass wheel, and stirring up the seeds falling into it as it passes with sufficient force to eject any seeds which may not fall out: a valve is placed at the lower side of the brass wheel, which is kept shut by a spring, and prevents any seeds from falling out, except just as the springs are dropping into the hole, when it is opened by the turning of the shaft, lets out the seed, when it instantly closes: the distances between the hills is regulated by the size of the whirrs.

[Fig. No. 43.]

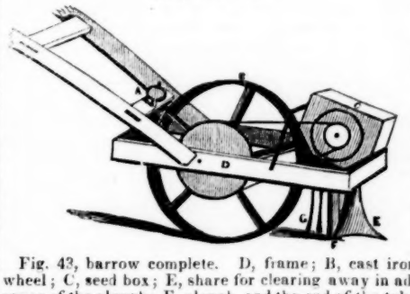


Fig. 43, barrow complete. D, frame; B, cast iron wheel; C, seed box; E, share for clearing away in advance of the plough; F, plough, and the end of the tube through which the seeds are passed to the ground; G, iron rods, to turn the dirt on to the seeds and the wheel passing over it completes the planting; A, a screw to regulate height of handles.

This drill may be used for turnips, carrots, beets, beans, and all like garden and field seeds.

Climate, &c. of South Florida.

NUMBER ONE.

Key West, South Florida, June 12, 1838.

MR. BUEL—SIR—I am desirous of furnishing for your paper, a series of articles upon the character and condition of South Florida; and I send you this my first number for consideration. Should it find sufficient favor in your sight to secure it a place in your columns, the subject will be continued with much pleasure. It is designed to speak of the country as it is—neither to exaggerate its favorable characteristics, nor to omit a sufficient detail of the objections which are justly chargable to this as well as to all other places under heaven.

The fact, that South Florida is the only part of the United States that possesses a tropical climate, is sufficient, it would seem, to give it a peculiar interest in the minds of our intelligent countrymen, both for the advantages which would result to the nation from its settlement, and the satisfaction it would afford to amateurs in agriculture in general, and horticulture in particular; and for the healthful retreat which it holds out to our northern invalids, where they may temporarily withdraw from the severity of their winters, or permanently settle and make for themselves a delightful and even luxurious home.

The little information I possess respecting South Florida, has been gathered during a short residence of only sixteen days at the Cape, where I intend to settle permanently, and a *stay* at Key West for the last two and a half years, where most of the inhabitants of the former place have resided since the commencement of the war. Of all these people I have made diligent inquiries; and upon their united testimony, carefully sifted and balanced, together with my own observations, are based the views and statements now offered to the public.

If it be objected that this information must necessarily be too limited and uncertain to command the reader's confidence, he may be assured that they who have written the most, and been the most liberal and positive in their praises and denunciations of this country, are even less acquainted with it than myself.

It is true, as has often been alleged, that South Florida abounds with inundated lands and swamps, and contains but a small proportion of what is generally termed good soil. Nearly all the interior is an unexplored region of fresh water lakes and wet savannas, whose extent is certainly great, though altogether conjectural. But even in these are wood lands, whose value and extent are also unknown. The lands bordering upon the bay at Cape Florida, (a sheet of water perhaps twenty-five or thirty miles in length, coastwise,) are chiefly dry and fit for immediate settlement. The same may be said of a great portion of the coast to the northward of that place. But to the south, after passing the limits of the bay, the coast becomes low and subject to occasional inundations, in some places by the sea, in gales, and in others, by the fresh water from the interior, throughout nearly its whole extent around Cape Sable as far to the northward as Cape Roman, and from thence there is but little improvement in the coast south of Tampa Bay. This belt of dry land at the cape is not more than from three to perhaps six or eight miles wide; yet here the first settlers of South Florida will undoubtedly make their location.

Having premised thus much, I will now venture the assertion that *that class of people for whom I now principally write, can no where find another place so fully adapted to their wants as Cape Florida and its vicinity;* and I proceed in the sequel to prove this assertion.

The class referred to are inhabitants of the northern states, who prefer their own republican government to all others, and therefore would not willingly leave it, but the state of whose health, impaired by the rigors of their cold and fickle climate, requires their removal to some country where those evils are not felt—who have few motives of pecuniary gain to gratify; no desire to dwell in populous towns in slavery to fashion, folly, and artificial wants; no itching for speculation in lands and paper village lots, or for the sudden amassment of money in any way; but who desire, and have refinement, and taste, and philosophy enough to spend their days in the quiet and virtuous enjoyment of rural life, enclustered in an independent little world of friends and neighbors, where summer reigns perpetual in undying verdure—or again, those of our countrymen who from natural temperament and taste prefer our southern clime; or who, though industrious, intelligent, and valuable members of society, are struggling with the evils of poverty, and harassed with anxiety for the present and future wants of their growing families—who dread the approach of winter for the multiplied expenses which it demands, where the means are already scant, and rack their brains in sleepless nights to devise some change for the better which never comes; and who would joyfully fly to our southern clime, could they but see their way clear to a comfortable subsistence—these compose that numerous class of people of whom I speak, and whose patient attention I now desire to engage.

The climate—particularly at the cape, and adjacent isles, has been sufficiently tested to put to rest all question of its salubrity. That vicinity has been inhabited by a population averaging perhaps about forty in number, for the last forty years; and their united testimony is extravagant in praise of its peculiar healthiness. They assert without exception that there has never been a case of sickness there of any kind; and they frequently compare that place with Key West, giving a decided preference to the former, in which they are ne-

ver contradicted. Yet Key West is *now* as healthy a place as I have ever known or wish to live in. Therefore, without sanctioning these extravagant assertions, we may safely conclude that the climate at Cape Florida is unusually salubrious. Yet to a person unacquainted with the causes which operate to make it so, it may seem strange that the interminable marshes with which the country is known to abound, do not produce sickness. They undoubtedly would do so, were people to settle in the worst of them, and there spend much of their time at fatiguing labor and exposure. I say the *worst* of them, because many of these swamps, as they are called, and indeed a great portion of the everglade, are merely shoal bodies of pure moving water, covering a bed of white sand—others are low prairies, covered with short stinted grass, sometimes dry, sometimes wet, and sometimes entirely inundated; the soil of which, though I have never examined it, I believe to be a lime marl—and others are doubtless composed of that loamy soil the tendency of which when marshy is always unhealthy. Furthermore, the settlements have been chiefly confined to the coast, over which the easterly winds from the sea are, a great portion of the time, blowing, and driving from them the miasmata that may arise from the wet grounds in the rear. The ridges on the coast are at an elevation of from ten to twenty feet, composed principally of sand resting upon a limestone base, and clothed with extensive pine forests, diversified with intervals of marl prairies. These circumstances are sufficient to explain the cause of the peculiar healthiness of that country.

I am aware that northern invalids often fear the effects of our summer climate. I did so myself before trying it. But they who have any disposition to pulmonary complaints, and indeed most of the inhabitants here, greatly prefer the summer to the winter. There is a purity—a luxury in our summer air which a northerner can never know, and which makes the temperature here of 90° more pleasant and agreeable than that of 85° at the north. The constant gentle breeze by which we are fanned—the pure air which the lungs inhale so easily—and the inviting shade in which the ease of earning our subsistence permits us to indulge, all unite to awaken the consciousn ss of present calm enjoyment which few other situations in life can impart. Our winters indeed are pleasant, and much praised by the invalids who yearly resort here—even more pleasant than our northern summers. But we complain of frequent and sudden changes of the weather. Yes, we complain; though the extreme winter range of the thermometer is between 50° and 82 or 3°; while the summer range at the north is from 32° to 100°. When the winds in winter are between east and south, which is perhaps two-thirds of the time, we are contented, and we lounge in our piazzas in thin summer clothing. But when the wind comes out of the north, then "stand by" for pinching cold. Woolen clothes become necessary, though some will shiver in their thin ones rather than change; and in the evening, perhaps half a dozen times during the winter, a cloak is very comfortable to sit in. Fire is quite out of the question. I have not seen that strange light in a dwelling since I left New-York in the fall of 1835. On these occasions the mercury ranges about 60° at its extreme depression. It has been known since the settlement of the island, *twice only*, to fall below 50°. And it has been known to rise, in summer, above 90°. So far this season it has not been above 85°.

I speak here of the temperature of Key West. Cape Florida is one degree further north, and of course is some colder; but no thermometer having ever been kept there, its exact temperature is not known. Neither am I satisfied whether frost has ever been seen there or not. It certainly has not on Key Biscaino, which helps form the bay, since the light house has been there, which is ten or twelve years. At all events, garden vegetables thrive there throughout the winter. While I was at the cape, in January, we had green peas, beans, corn, fresh potatoes, and other articles of the kind. Indeed planting and plucking, upon a limited scale, is in progress there at all seasons of the year; and the fruit trees exhibit their flowers, their green and their ripe fruit at the same time and almost at all times.

The title to a large portion of the land at the cape, as well as elsewhere in the territory, is yet unsettled. Before the cession of Florida to the United States, a tract of twelve miles square was granted by Spain to one Don Juan Arrambide, the south line of which passes east and west, through the mouth of the Miami river, about eight miles north of the principal entrance into the bay from the sea. This grant has been decided to be valid by the Superior Court for this district, having jurisdiction of such cases; but the United States have appealed from the decision to their own Supreme Court. When the appeal will be tried is uncertain—perhaps not within two or three years. No doubts, however, are expressed here that the decision will be confirmed. Still this case will not determine *in whom* the title in fact lies—but merely whether or not it lies in the United States. In the mean time there is a suit pending in Chancery between three several parties, each of whom lay claim to the land under the said Spanish grant. This suit will probably be determined in the course of a year, when, it is believed, the land will be offered for sale, by the successful party, on some conditions to secure the purchasers against loss, in case the Supreme Court should decide against the validity of the grant.

This tract embraces the whole of the north end of Biscaino bay, and extends east and west from the sea to the everglade, including the whole of the Miami and its branches, Little river, Arch creek and the mouth of Rio Ratones, all emptying into the bay. South of the Miami, and stretching along the shore of the bay, lie three donation grants containing one square mile each, all owned by a resident.

With the exception of these grants, the title to the land is clear and undisputed in the government. But inasmuch as it has never been surveyed, nor brought into market, they who settle it must rely, for their title in future, upon their right of pre-emption. Such settlers are furthermore protected by an express provision of our Territorial Statute recognizing in them a property in the lands they thus possess, defensible, transferable, and subject to execution.

I propose in my next to treat of the soil and productions of the country, and the various means of subsistence for those who dwell there.

L. W. SMITH.

EXTRACTS.

From the New England Farmer.

Ashes—Milk—Bog.

We have the pleasure to present to the agricultural public the subjoined highly valuable communication; and acknowledge ourselves much indebted to the kindness of this intelligent and skilful cultivator for having at our request presented it. Our attention in passing on the road from Pawtucket to Providence had been always particularly attracted to the improvements going on on this farm, and the order and neatness which marked the premises. The last spring, on a visit to some relatives, we had the pleasure of examining the excellent management pursued at the establishment. The cultivator it will be seen from the style of address, is a friend. This most exemplary christian sect are always remarkable for their neatness and order, qualities which are so valuable, and produce so much comfort in life. "Thou shalt be neat and clean, and systematic and orderly in thy person and in all thy dealings" is a commandment, which if they have not actually added it to the decalogue, seems to have with them almost as high an authority. A slovenly Quaker is a "rare bird;" an anomaly seldom occuring. We cannot too much commend them for this. "Order is Heaven's first law." Neatness, as a friend was accustomed to remark, is next to godliness; it is essential to good manners and almost equally so to good morals: its opposite is certainly a violation of what are called the minor morals of society. H. C.

North Providence, 6 mo. 4, 1838.

Respected Friend, Henry Coleman—I have never known more profitable results from the application of any manure to light and sterile soils, whether loamy, sandy, or gravelly, than from leeched or unleeched ashes. They have long been used in Rhode-Island with great success, especially in the growing of barley and clover, to which they seem peculiarly adapted. As evidence of the estimation in which they are held by the farmers of the Island, ten cents per bushel have been paid for them in Newport for the last twenty years and upwards, and though considerable quantities have been furnished from different places on the sea-board, the demand for them has always exceeded the supply. They are generally used at the time of seeding, spread on an even surface and harrowed in lightly with the grain and grass seed. The quantity varying from 50 to 100 bushels per acre.

In 1833, a lot of land falling under my management which had then recently been purchased at $30 per acre, seven acres of it and perhaps the least valuable part, which in my opinion never possessed fertility, though it is usually called worn out land, being a sandy plain, gravelly subsoil, were ploughed and rolled, in order to secure for the benefit of the crop what little vegetable matter had been turned under; about 1,600 bushels leeched ashes were then spread on the lot, and it was sowed with 10 quarts millet and 16 lbs. southern or small clover seed to the acre. The season proved dry and the seed took badly, the crop of millet was 10 tons by estimation, and was sold for $180. 19 tons clover were supposed to have been obtained the two succeeding years at four cuttings; this too was sold for $316. The clover having nearly all perished in the winter of 1835-6 it was pastured the season following, and last year 1,136 bushels ashes having been applied to it, it was again sowed with millet, and stocked as before with southern clover, 20 lbs. to the acre. The product was 13 tons millet, for which I credited the owner $221, retaining it for my own use. Like results have been obtained from similar treatment of the same description of soil in various instances, this not having been selected because the most striking, but because the amount for which the crops sold fixes their value, without knowing exactly the quantity produced, which in each case has been supposed. The labor bestowed on the lot was more or less blended with other business of the farm; it is therefore difficult at this period of time to ascertain the amount charged. I believe, however, it did not exceed the charge in the subjoined account.

Cost of land,	$210 00
" ashes for both dressings,	215 54
Seed for do.	41 25
Ploughing 10½ days,	21 00
Rolling 3½ do	7 00
Harrowing 3½ do	7 00
Carting outside furrows,	7 50
Sowing 3 days,	3 00
Carting and spreading ashes,	54 00
Cutting, curing, and housing 41 tons millet and clover,	123 00
5 years taxes,	2 10
Interest accruing on transaction,	46 00
	$737 39
Cr.	
By Produce sold, amounting to	$717 00
Value of pasturage,	15 00
Value of lot in its present condition,	385 00
	$1,117 00
	737 39
	$379 61

There is reason to suppose from present appearances that the lot in question will cut two tons clover this season per acre; it will therefore be seen that my valuation is not a high one. A repetition of the treatment it has received, would no doubt improve still more the texture of the soil, but I am inclined to think there might be a falling off instead of an advancement in the amount of its productions, by subsequent ashings. Should this be the case it would indicate a suitable condition for more permanent improvement by manuring.

There is but one instance in which I can make out the exact quantity of milk sold in a year. It amounts to 11,131½ gallons; this is exclusive of a supply for the family, and was produced by I suppose an average of 20 cows. There have been seasons when I think a larger quantity has been produced in proportion to the number of cows kept, but the manner in which my books have been kept, hardly ever specifying more than the amount received for the article sold, does not enable me to determine with accuracy the quantity sold in any other year. In the instance given the milk was disposed of to one person at a certain rate, which with the amount of sales being known determines the quantity. How much was used by the family is not known, probably not more than 300 gallons.

In regard to the bog there is yet but little to be said, a greater part of it being yet on the tide of expeririment, whether successful or not, time will determine. The burnt part has hitherto been most productive. In 1835, ¼ acre was pared, the turf burnt, and the ashes spread over the surface. The year following it was planted with potatoes, the crop paying for the land at $30 per acre and all expenses accruing from its improvement. Last year nothing was taken from it, it was seeded the latter part of summer, and now promises a large crop of hay.

Respectfully thy friend,
ADAM ANTHONY.

From the Genesee Farmer.

Different Systems of Farming.

Mr. Tucker—In the management of our temporal affairs, whatever presents itself to our minds in the most clear and distinct manner, as best calculated to promote our interests, we embrace the most cordially, and pursue the most thoroughly. The operation of this principle is manifested in all the events and pursuits of life. And if the question should be asked, 'Why is it that men do not universally adopt the most approved and enlightened systems in the management of their different avocations,' the answer must evidently be, that from want of proper information they are not equally convinced, by a clear and distinct perception, of the superior merits of any system but their own. And in no other business is the practical operation of this principle so manifest as in that of farming; where a great diversity of systems leads to as great a variety of results.

My purpose is to show that farming, in its great fundamental features, is one of the plainest and easiest things in the world, if we but take hold of it in the right way.

Let us first look at the different systems of farming in vogue among us. The longest tried, and most venerable, is that of *Skinning*, whereby the farm and the farmer become impoverished together. This system has yet many advocates in the land, who settle down on good soils, work it hard, and wear it out; then sell cheap, and go to the *west* and buy cheaper and better soils; wear that out, pull up stakes again, and again push off to the west. By this system, new countries are cleared up and settled, and a broader scope given to population; fulfilling the requirements of Scripture, "be ye fruitful, and multiply and replenish the earth." Another system, of a somewhat more modern date, is, *Let well alone*. This system is

an innovation on the former,—it keeps the farm and the farmer in *statu quo*, or just as they were; upon the idea, that attempting to improve nature is warring against Providence—it keeps society stationary, as offering no inducements to emigration; the requirements of life are not multiplied, as wealth is not amassed and luxury induced; and population is kept uniform and steady. Another and still later system of farming is, *Improving;* whereby the soil is renovated, the crops more abundant, and the farmer is enriched. This is the latest innovation that has been made upon the old system of *Skinning*, and is antipode to it. It finds but few advocates yet, although its advantages are so superior; as it is hard to prove to men that they are and always have been blind. Men naturally incline to pre-conceived opinions, and do not willingly forsake them, as they are reluctant to acknowledge themselves in error; and their minds are consequently hardened against new impressions, however valuable, and advantages are forsaken which might have been easily secured. But with all man's attachment to old ways and notions, the *Improving* system of farming is gaining ground every day. It is true that this system is somewhat in advance of the times, as the ignorance of the mass of farmers does not permit them to see and appreciate the correct principles upon which it is based. But as its utility and soundness are every day more and more developed and extended, its advantages become more and more apparent; and if its *theory* be not misunderstood, its results being visible, its *precepts* will be adopted and applied.

I have said that farming is one of the plainest and easiest things in the world, if we but take hold of it in the right way; and having exhibited the different systems, *Skinning*, *Let well alone*, and *Improving*, with a brief view of their relative merits, it must be apparent that the latter is the best system of farming, and the right way of taking hold of it. Its advantages over the other systems, I have said, were, it improves the soil, enlarges the crops, and enriches the farmer; it moreover diminishes the relative labor, and affords support to a more dense population. These are advantages of no ordinary magnitude, peculiarly resulting from this system.

The principle upon which the *Improving* system of farming is based, is simply this—so managing the soil as to make it afford to the plants grown upon it, a full and sufficient supply of nourishment, to bring them to the highest degree of perfection; and so managing the plants cultivated, as to keep them in the most healthy state, that they may draw from the earth and the air the greatest amount of nourishment they can elaborate. This is the *Alpha* and *Omega* of this boasted and book-taught system. As different soils and crops require difference of management, I shall, for the purpose of illustrating the principles of this system, barely give a general outline of its features, upon which a fair estimate can be made with regard to its detail. First, and most important, the soil should be well enriched with *barn-yard manure;* whereby it will be made more friable, more pervious to the atmosphere and the roots of the plants, and less subject to be injuriously affected by drought and heavy rains;—manure, besides, affords the most permanent and important supply of nourishment to plants; and should be thoroughly incorporated with the soil. Another peculiarity of this system is *rotation of crops.* whereby the different constituents of the soil are all and equally taxed, and none of its energies left useless and inactive—this is an important consideration. Where the soil can be adapted to it, the root culture should be a primary object, to the full wants and consumption of the farm stock, as affording the greatest profits in the largest amount of animal sustenance, and leaving the soil in a good condition for small grains. Clover is another important crop; it is next to barn yard manure as a fertilizer and pulverizer of the soil, for which it should be ploughed under and permitted to rot. Other crops, as required, and adapted to the soil, following in rotation, with proper dressings of manure, will improve the soil, and yield golden harvests to the farmer—if he will go one step farther, and manage his crops as well as he has his lands. The plants cultivated should have the soil *all* appropriated to their use, by extirpating with the hoe, or otherwise, all weeds and other foreign plants; which, if permitted to grow, would absorb some of that nourishment from the atmosphere and the earth which would otherwise be taken up by the crops, in the more full and perfect development of their quality and quantity. As regards hoed crops, the surface of the soil should be stirred as often as practicable, but not so deep as to injure the roots; leaving the surface as near as may be, the same that it was when the seed was put into the ground. Nature having indicated the proper depth of the roots in the soil, it can neither be increased or diminished but to the disadvantage of the plant.

These general rules, acknowledged correct and important by all who have tried them, could they be reduced to general practice, would have a most salutary influence upon the farming interests, and upon the interests of every other class in society. These rules are simple and easily applied. Always keeping one purpose in view, viz: making your crops healthy, by attending properly to them, and giving them enough to eat, and the great end of agriculture is attained. It is true, that farming requires intelligence to conduct it with pleasure and profit, as what occupation does not? The science teaches us the way of forcing nature to shower her blessings upon us in greater profusion—it enables us to grasp the cornucopia with our own hands, and to pour out its treasures into our own laps. E. W.

Pittsford, June 6, 1838.

From the New-England Farmer.

I have great pleasure in presenting the subjoined statement to the agricultural community. It came to hand some time since, but its publication has been delayed in the expectation of receiving the reports referred to from the other families. Like every thing else which comes from this worthy people, the report is well drawn up; and will be read with much interest. It is impossible I believe to find more striking examples of neat, careful, exact, and skilful husbandry than are to be found in these industrious and temperate communities wherever they are planted in any part of our land. H. C.

Report of the Farm of the United Society called Shakers in Canterbury. First Family.

No. of acres.	Live stock.
Tillage 25 to 30,	Horses 10,
Eng. Mowed 100,	Oxen 10,
Wet Meadow 40,	Cows 40,
Pasture 500,	Sheep 300,
Orcharding 30,	Swine 40,
Wood, Waste, &c. 500,	Young Neat Stock 10,

Soil, Loamy; Dry; Rocky; Hilly.

Shaker Village, Merrimack co. N. H.
Oct. 30th, 1837.

Henry Coleman—*Esteemed Friend*—I have annexed a sketch below in answer to your inquiries with as much exactness as practicable, as I had to obtain it from those who had the experience of *actual experiment*, as we have never kept any record of any such thing, hence the difficulty of obtaining the desired information. If any thing that I have written on the subject will be of use or interest to you, you are heartily welcome to the same; and were it not for the pressure of business and the limited time, I should have been glad to have given you a more lengthy and minute report. With much respect, your friend,

WILLIAM WILLARD, for and in behalf of the first family at Canterbury, N. H.

Amount of hay usually cut is from 140 to 250 tons per year, in this (first) family, exclusive of the other two families, who have made out (or will) their memoranda separate, as you will perceive, viz: in year 1835, 140 tons—1836, 226 tons—1837, 133¼ tons.

We have one field of 12 acres, another of 10 acres, and part of another which has not been ploughed for upwards 30 yrs. In one of said fields we cut 32 tons to 12 acres the first mowing, or 2 8-12 tons to the acre, besides the second crop. We apply top dressing once in a few years and roll the same in by means of a roll filled with iron pikes, sharp, 4 or 6 inches long, drawn by oxen or horses.

Wheat.—Our soil not being well adapted to wheat we can say but little about it, as we raise but little; generally not more than from 35 to 50 bushels per year, the most that we ever raised per acre was 40 bushels which is an extra crop for us.

Corn.—We raise but little, from 50 to 70 bushels per acre. On a neighboring farm, 12 miles distant, was raised a few years since 112 bushels 5 qts. to the acre—was planted in hills, not dunged in the hills, but spread on the surface and ploughed in, which we think the best way.

Oats.—Sow annually from 10 to 12 acres, yield on 3 acres in year 1836, 80 bushels per acre—average yield of 10 acres 60 bushels per acre, with exceeding heavy straw; the land was of good quality and prepared in the usual way.

Potatoes.—We usually raise from 2,000 to 2,500 bushels annually. The largest crop we have raised was in year 1833, which was 400 bushels per acre, (common potato) the land had no extra preparation.

Turnips.—Raise from 4 to 600 bushels annually, of the common English and Ruta Baga. In 1836 raised from 7 to 800 bushels of English, have raised from 4 to 600 bushels of Ruta Baga per acre, consider them good for sheep, cows, and beef cattle.

Flax.—Raise but little of this article of late years. In 1822 raised the greatest quantity, which was 900 lbs. Flax from 5 pecks sowing on 1¼ acres of ground, prepared in the usual way.

Carrots.—We annually raise more or less of these, some yrs. 1,000 bushels: one year raised 800 bushels per acre.

Peas.—In year 1836 sowed on one piece 3 pecks, yield 16 bushels.

Beef.—The largest beef we have raised weighed 1460 lbs; fattened on carrots, potatoes, with but a small quantity of meal.

Pork.—There are a diversity of opinions in regard to the best and most expeditious manner of fatting hogs. We have tried perhaps as many different plans as we have had different hands to fat them. Some will say all corn, some part corn with potatoes, &c. We for 2 or 3 years have adopted the plan of gathering our apples into our hog-house instead of the cider mill, and feed them upon boiled apples, potatoes, and pumpkins, with the addition of a small quantity of meal, to be increased as the killing time draws nigh, and under this management we have never known our hogs to thrive better or faster. Another method we have tried, (when fed with corn.) Take a tight barrel, fill it half full of corn, pour boiling hot water until the corn be covered, let it stand a few hours, and the barrel will be full of corn, and very little if any water to be discovered; this answers when at a distance from mill, and is better than dry corn without grinding; but we think it will not fat so well as made into proper meal. We had 20 hogs fatted on meal, began 1st day of August, one of them killed last of October, weight 400 lbs; the other 19 killed 23d December, average weight of the 19, 480 lbs; the meal mixed part of the time with skimmed milk, mixed as dry as possible; gave them at first 1 quart of meal per day each, from that to 3 quarts per day each, and a time before they were killed they refused 3 quarts per day; have frequently had hogs weigh 600, fattened on potatoes and meal. Had one small shoat, very small size, taken away from the rest and fed on one pint of corn per day, with meadow hay, milk, and wash, from September to December, weighed when killed 500 lbs; this pig when separated from the rest was the smallest in the lot. We are decidedly in favor of apples for hogs and cows. We take them promiscuously as they grow, without regard to their being sweet and sour.

Wool.—Average number of lbs. of wool for Merino bucks, from 7 to 9 lbs; have sheared 10 lbs.; average number of lambs per year from 150 to 190 Merino.

Breed of Cattle.—The Durham Short Horn for cows and stail, for labor we have not had sufficient experience of them.

The most profitable article for cultivation are the potato and carrot for fatting hogs and beef, and for milch cows.

Lime as a Manure.—We have used lime as a manure to good advantage; it restores and replenishes the soil that is apparently worn out. We air slack it and spread it and plough it in. Gypsum we have made no satisfactory trial of.

We suggest the idea to all that can obtain it, the use of *saw-dust* as a litter for hogs, horses, cows, oxen, &c. We have tried it for years; litter all our horses with it, like it much better than straw. We in the spring haul the saw-dust from the mill and deposite it in a convenient place to be got at, at night throw half a bushel or more under each horse, taking care to scrape out all that is wet beforehand, and in the morning it mixes in with the manure, goes into the heap, absorbs the wet, and forms a compost, and in a similar way for hogs, oxen, cows, &c.

Another effectual experiment I have tried, which is, before putting a quantity of oats into a close bin, (as we do frequently 7 or 800 bushels,) to throw or sprinkle fine salt among them; this prevents them from heating, also makes them relish better, and finally keeps them entirely free from must.

Horse Rakes we use—when constructed on the right principle are a great labor saving machine; we usually rake at the rate of 4 acres per hour. The same may be said of threshing mills. We have one of our own construction, a description of which would exceed the limits of this sheet. We usually thresh from 100 to 150 bushels per day; at the same operation it is winnowed and cleaned already for putting up.

The report of the second family, I have as yet been unable to procure.

Amount of butter for 10 yrs. past, 2,436 lbs. per year.
" cheese " " 3,265 " "

Hints for Prevention of Disorders in Horses.

Chiefly taken from Messrs. Clarke and White's valuable Treatise on Horses.

STABLES.

Stables should be lofty, light, and airy, and should never contain more than six or eight horses. They are in general kept too close and hot.

Too much clothing also is usually put upon the horses, which thus become so tender, that they catch cold upon every slight exposure to a cool air.

The doors and windows of stables should be thrown open when the horses are out, but care must be taken that a cold current of air does not immediately blow upon them when in the stable, particularly if they are heated.

It is a bad practice to allow horses to stand upon litter in the day time, except they are unwell or fatigued.

FOOD.

The quantity and quality of a horse's food should invariably be regulated by the exercise and fatigue he has to undergo; high feeding, without proportionate work, produces half the disorders to which horses are subject.

Good hay is of much consequence to horses engaged in active exercises; but it should be given in small quantities during the day; and when owing to bad weather, the horses cannot be exercised, they should be stinted both in their hay and corn; and a bundle or two of clean wheat straw may be put before them. All grain given to horses, would be more nutritive if bruised in a mill and mixed occasionally with chopped straw. Carrots are a most wholesome food, and of all roots, rank next to corn in point of nourishment. They are particularly serviceable when a horse's wind is affected.

When horses are first taken from grass they should be gradually brought to a dry diet by giving them carrots, lucern, bran mashes, &c. with their hay. After a few days a small quantity of oats may be given, and the feed increased by degrees till they come to their full allowance. They should likewise be put into a cool stable, and have plenty of walking exercise. If such precautions were attended to, a great saving might be made, both of physic, and the horse's constitutions.

WATER.

Pond water, if it lie on a clay bottom and be sweet, agrees best with horses; hard water may be improved by throwing some chalk or clay into it, and exposing it in cisterns to the open air.

It is proper to let the water, intended for the horses, stand for some hours in pails in the stables before it is used.

Water should be offered to horses frequently; they would then never drink large quantities of it at a time, which is particularly hurtful to them when heated by exercise. It is a good and safe plan when travelling, &c. always to mix hot water enough with their cold to take off the chill.

EXERCISE.

A horse's exercise should be proportioned to his strength, manner of feeding, and the labor required of him. He ought, however, to have at least two hours of daily exercise.

Horses should not be ridden fast after having been newly fed and watered. A fat horse requires a long course of moderate exercise, before he can safely be put to trot, which is violent.

It should be a general rule to ride a horse slowly at the beginning of a stage; afterwards increase the pace, and slacken it again a mile or two before the end of it, so as to bring him tolerably cool into the stable.

If horses come in very warm, they should be walked about gradually till cool, their feet should then be picked, and all dirt and gravel carefully washed out. In hot weather, washing their legs is proper, but they should always be well rubbed afterwards. In winter, cold water is injurious to the heels, and apt to bring on swelling and the grease.

Horses should on no account be permitted to stand uncovered in the stable, much less at the stable doors after being much heated, except the weather be very warm. Road horses should in the middle of a long stage have half a pail of water mixed with a little oatmeal; and on a journey, if no other corn but what is soft and new can be procured, oatmeal just moistened with water or some coarse bread, should be given in preference to such corn, which is extremely unwholesome. If a horse grow costive, let him have some mashes of scalded bran or malt. If he have any difficulty in staleing only, an ounce of nitre may be given in his food for a few nights.

Should he be seized with a violent fit of the gripes, let him be bled, back-raked, and have a glyster of three or four quarts of water gruel mixed with eight ounces of glauber or common salt.

The best instrument for giving a glyster is an ox bladder, that will hold two or three quarts, tied to the end of a wooden pipe about fourteen inches long, one inch and a half diameter where the bag is tied, and of a gradual taper to the extremity, where the thickness should suddenly increase, and be rounded off at the point, and made as smooth as possible. The hole through the pipe may be made sufficiently large to admit the end of a common funnel for pouring the liquor into the bag; no other force is requisite to throw it up, than the holding the bag a little higher than the level of the pipe. If in consequence of violent inflammation and pain, and opiates should be necessary, a table spoonful of laudanum may be given in a pint of water.

Should a horse be touched in his wind, be very careful that he has only moderate quantities of food and water at a time. Two spoonfuls of tar mixed with the yolk of an egg given in a morning fasting will be of great service to him when travelling. In hot dry weather, it is useful to stop horse's feet at night with a mixture of soft clay and cow dung, and to moisten them frequently with water.

FRICTION.

The currying, brushing, and rubbing down horses is of great importance, not only to their coats, but also to their general health; when these operations are neglected, or slightly performed, an obstruction takes place in the pores of the skin producing mange, &c. and the hair instead of being smooth and shining, stares, and stands on end. Nothing tends so much to prevent grease and swelling of the legs, as frequent hard rubbing and carefully cleaning the heels.

TRIMMING.

The ears of horses are covered with a short down in the inside, mixed with larger hairs, to prevent cold air, rain, dust and flies from hurting the internal ear. The trimming therefore this part, is very prejudicial to the horse.

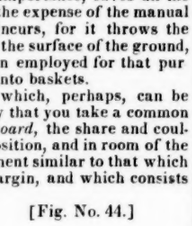
Harvesting Potatoes,

Where the crop is large, is a slow and tedious operation; and when the plough is employed to abridge the labor, great loss often ensues, from the gathering being imperfectly made. Our fellow citizen and friend, Joab Center, of Hudson, contrived a plough two years ago, to facilitate this process, which we were told worked well; but as we never saw it perform, we have not felt authorized to speak of its merits. In the mean time, Mr. Lawson, of Edinburgh, seedsman, has invented a mould board, which may be attached to a common plough, we believe very much on the model of Capt. Center's. We give drawings of this below, together with Mr. Lawson's description of its structure and operation, and in time for those who wish to profit from the improvement, to give it a fair trial the coming autumn. We take the article from the Quarterly Journal of Agriculture.

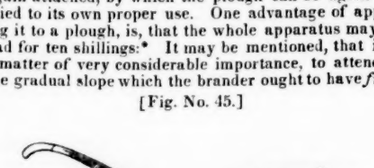
"The machine I am about to describe, and which I would call the *potato-raiser*, besides doing its work more efficiently, a matter of great importance, saves all the *hacking*, and consequently all the expense of the manual labor which that operation incurs, for it throws the greater part of the potatoes on the surface of the ground, and at once enables the women employed for that purpose to gather them by hand into baskets.

"The shortest description which, perhaps, can be given of this machine, is to say that you take a common plough, *deprived of its mould-board*, the share and coulter remaining in their usual position, and in room of the mould board, attach an instrument similar to that which is represented in cut in the margin, and which consists of malleable iron-bars, joined together in the form of a gridiron or brander. It is 26 inches long from *a* to *c*, 18 inches from *c* to *d*, and 27 inches along the line from *d* to *b*, and the breadth *a* to *b* 5 inches. It is attached by the edge *a c* to the furrow side and stilt of the common plough by screws, the fore part, *a b*, resting immediately behind the share, like the common mould-board; the angle at *c* is set about 8 inches above the sole of the plough; the edge *c d* slopes *downwards* in a convex curved form until the point *d* is about 4 inches above the level of the sole. The brander is fixed by screws at *c f*, and one may be required at the solid part *a b*, but these fixtures must be regulated by the construction of the plough. The following cut represents a plough mounted as a potato-raiser in the manner here described. The brander can be taken off the plough at pleasure, and mould-board again attached, by which the plough can be again applied to its own proper use. One advantage of applying it to a plough, is, that the whole apparatus may be had for ten shillings:* It may be mentioned, that it is a matter of very considerable importance, to attend to the gradual slope which the brander ought to have *from*

[Fig. No. 44.]



[Fig. No. 45.]



the landward edge. Were it to lean *inwards*, or towards the land-side of the plough, it would do its work but imperfectly.

"The potato-raiser is drawn by one pair of horses, in the same manner as a common plough. In working it, the ploughman inserts the machine into the potato-drill, so as to have the whole of the potatoes on the *right-hand* side of the machine. He then proceeds along the drill, splitting it up in the common way. The earth is thus thrown to the right hand side, and the potatoes lie scattered on the surface of the ground behind the plough.

"Women provided with baskets follow the machine. They gather the potatoes into the baskets, and throw the stems of the potatoes upon the drill which lies to the right-hand of the drill from which they are gathering the potatoes. The reason why the potato stems are thus removed, is, that, as soon as the potatoes which lie on the surface are gathered, the machine returns, and again proceeds as before, through the part of the drill in which the potatoes lay, still turning the earth to the right-hand side. This *second* operation raises to the surface any stray potatoes which the first may not have turned up, and the potatoes raised by the second operation, are immediately gathered by the women who attend for that purpose. This second operation may be delayed till about twelve drills are turned over by the first operation, and the potatoes gathered. The machine may then be put through these twelve drills the second time. By this there will be a saving of labor, as a smaller number of women will gather the potatoes raised by the second operation. If the stems of the potatoes be very *strong and luxuriant*, a few women may be put along the drill to pull them out of the ground, at the same time gathering up any potatoes that may adhere to, and come along with, the stems. If this be done, the potato-raiser will turn up the greater part of the potatoes by going *once only* through the drill; in going *twice* it will do it in the most satisfactory manner. A man with one pair of horses will thus pass over the ground as quickly as with a common plough.

"These two operations are all that are required to raise the potatoes to the surface, the land being afterwards harrowed in the common way. The potato-drills ought to be of the ordinary breadth, so as to give the machine room to work. Very narrow drills do not suit it.

"I may mention, that the farm on which the potato-raiser has been used, is a light loam, and in that soil it performs its work in a very satisfactory manner. It pulverizes the soil in an extraordinary degree, and scarcely leaves a potato in the soil. I have never before been able to clear my fields of potatoes so effectually as by this machine, or at nearly so small an expense."

* For the sake of those who desire to fit up ploughs in this manner, it is desirable that the strength of the iron of the brander had been particularized. We conceive the external frame should be five-eighths of an inch square, the internal bars one half inch diameter.—*Editor.*

Dr. Dana's new mode of Analyzing Soils.

[*From Professor Hitchcock's Geological Report.*]

1. "Sift the soil through a fine sieve. Take the fine part; *bake* it just up to browning paper."

2. "Boil 100 grains of the baked soil, with 50 grains of pearl ashes, saleratus or carbonate of soda, in 4 ounces of water, for half an hour; let it settle; decant the clear; wash the grounds with 4 ounces boiling water; throw all on a weighed filter, previously dried at the same temperature as was the soil, (1); wash till colorless water returns. Mix all these liquors. It is a brown colored solution of all the soluble geine. All sulphates have been converted into carbonates, and with any phosphates, are on the filter. Dry therefore, that, with its contents, at the same heat as before. Weigh—the loss is *soluble geine.*"

3. "If you wish to examine the geine; precipitate the alkaline solution with excess of lime water. The *geate* of lime will rapidly subside, and if lime-water enough has been added, the nitrous liquor will be colorless. Collect the geate of lime on a filter; wash with a little acetic or very dilute muriatic acid, and you have geine quite pure. Dry and weigh."

4. "Replace on a funnel the filter (2) and its earthy contents; wash with 2 drachms muriatic acid, diluted with three times its bulk of cold water. Wash till tasteless. The carbonate and phosphate of lime will be dissolved with a little iron, which has resulted from the decomposition of any salts of iron, beside a little oxide of iron. The alumina will be scarcely touched. We may estimate all as *salts* of lime. Evaporate the muriatic solution to dryness, weigh and dissolve in boiling water. The insoluble will be *phosphate of lime.* Weigh—the loss is the *sulphate of lime;* (I make no allowance here for the difference in atomic weights of the acids, as the result is of no consequence in this analysis.)"

5. "The earthy residuum, if of a greyish white color, contains no insoluble geine—test it by burning a weighed small quantity on a hot shovel—if the odor of burning peat is given off, the presence of insoluble geine is indicated. If so, *calcine* the earthy residuum and its filter—the loss of weight will give the insoluble geine; that part which air and moisture, time and lime, will convert into soluble vegetable food. Any error here will be due to the loss of water in a hydrate, if one be present, but these exist in too small quantities in 'granitic sand,' to affect the result. The actual weight of the residuary mass is 'granitic sand.'

"The clay, mica, quartz, &c. are easily distinguished. If your soil is calcareous, which may be easily tested by acids; then before proceeding to this analysis, boil 100 grains in a pint of water, filter and dry as before, the loss of weight is due to the *sulphate of lime,* even the sulphate of iron may be so considered;

for the ultimate result in cultivation is to convert this into sulphate of lime."

"Test the soil with muriatic acid; and having thus removed the lime, proceed as before, to determine the geine and insoluble vegetable matter."*

Sources of Geine or Vegetable Nutriment.

[*From Prof. Hitchcock's Geological Report.*]

Having now pointed out the situation and value, so far as known, of all the calcareous deposites in the state that can be applied to agriculture, and of other substances whose action on soils is somewhat analogous to that of lime, the next grand inquiry is, whether there are any sources in the earth from which additional quantities of geine can be obtained, or matters convertible into geine. I pass by the whole list of common manures, presuming that they will be fully discussed by the Agricultural Surveyor. And I shall merely notice the natural sources of vegetable nutriment within our limits.

PEAT SWAMPS.

The peat swamps of New-England have become a vast repository of organic matter, which is, and has been for ages, increasing. In addition to the larger vegetables, which, as they die, fall and are enveloped in the soft matter on which they grew, there is a thick mat of moss, which—especially the sphagnum—continues to flourish at the upper part while the lower part dies and decays. In favorable circumstances as to wet and temperature, this mass of vegetable matter becomes converted into peat. Only a small part, however, of what is thus accumulated, becomes peat of such a character that it answers well for fuel. Often it is too much mixed witn mud to be easily burnt, and sometimes the vegetable fibre is scarcely changed. Yet the whole of it is capable of being converted into vegetable nutriment. And I am convinced, from all that I have seen and heard, that Massachusetts contains enough of this geine and vegetable fibre in her swamps, to render all her fields fertile for centuries. In other words, here is an exhaustless source of geine. Some of it is already in a soluble state; and therefore the black matter from swamps, is rarely spread upon soils without producing some benefit. Yet for the most part the geine is in such a state as to require some chemical change before it will become soluble nutriment, fit to be absorbed by roots. It is an important inquiry then, what is the best mode of accomplishing this change. This has been attempted, first, by mixing the peaty matter with good manure in alternating layers, and suffering them to ferment for a long time, the peat being in much the greatest quantity. Secondly, by mixing it in a similar manner with lime; and thirdly, by mixing it with alkali, or some compound containing alkali. The principles respecting geine which have been advanced in this report, will probably enable us to decide as to the preference to be given to any one of these methods. And here I have it in my power to give the opinion of Dr. Dana, whose remarks I am always happy to substitute for my own, on a subject with which he is so familiar, and which he has done so much to elucidate.

"The fact," says he, "that peat or turf is very soluble, in alkali, seems not to be known among our farmers. The usual practice of mixing lime with peat or turf is decidedly the worst which can be followed. The geine which constitutes a large part of peat bogs, forms with lime a compound little soluble in water, requiring at least 2000 parts of water to one of geate of lime: and if the compound has been dried and sun-baked, a still larger portion of water is required: it becomes, in truth, almost insoluble. With alumina, geine forms a compound still more insoluble than with lime; and though the vegetable matter in combination with these earthy bases, is actually absorbed by the roots of growing plants, still the geine is in a state much less favorable than when in combination with alkali. Mix ley of wood ashes with peat, and we form a dark brown vegetable solution: the alkaline properties are completely neutralized by the geine, and very often ammonia escapes from turf when treated by caustic alkali. When we add, that this geine absorbs and retains nearly its own weight of water without seeming moist, it is evident, that with the use of ley or wood ashes, the value of peat as a manure will be very much increased."

I will only add, that in my opinion it would be very desirable to have a series of experiments performed by a practical chemist upon the different varieties of our peat, and especially upon the best mode of converting it into soluble geine. Since by the old methods of analysis the different varieties of peat would be found to differ from one another only in the quantity of organic matter which they contain, I supposed it would be useless to analyze them, and therefore did not collect specimens of the peat and other vegetable matters that occur in our swamps. The doctrines respecting geine put a new aspect upon the case, and lead me to regret that such a collection was not made. The labor of doing it now, however, is small; and when it is considered what an immense mass of organic matter now lies useless in our swamps, while the fields around them yield but a scanty crop, and that the chief reason why our farmers make so limited a use of this manure, is, that they find it difficult to convert it into soluble nutriment, I sincerely hope that the government will do all in its power to bring into use this important part of our fossil resources.

MARSH MUD.

Every intelligent farmer probably knows, that this substance forms an excellent manure; although I apprehend it is employed far less than its value demands. An intelligent farmer in Maryland states, that he "deems it more valuable than barn-yard manure;" and that "it never failed in any application he had made of it." He also prefers it to marl, because "it is more accessible, its effects are quicker, and much more can be done in the way of improvement for the same money." At the same time he confesses, that the permanent advantages of marl are much greater; and thinks that marl and marsh mud will both be improved by combination.* This last remark appears still more important, when we ascertain what it is that gives an agricultural value to this substance. The fact is, it sometimes contains a large quantity of geine, and sometimes but little, while the quantity of the salts of lime, soda, and magnesia, is rather large; so that sometimes a mixture of marl will be of service, and sometimes not. The following analysis of a few specimens of marsh mud, both in the ordinary way and by Dr. Dana's method, will show us, I think, what it is that constitutes its fertilizing power, and afford some useful hints as to its application.

Analysis in the dry way by Alkali.

Number.	Locality.	Water of Absorption.	Organic matter.	Silica.	Alumina.	Oxide of iron	Lime.	Magnesia.	Salts soluble in water.	Sulphuretted hydrogen and loss.
135	Newburyport,	3.2	3.3	68.4	14.7	7.4	2.0	0.8	0.2	0.3
136	Medford,	9.5	12.5	50.95	14.9	8.15	1.1	0.2	0.6	2.1

Analysis by Dr. Dana's Method.

Number.	Locality.	Soluble Geine.	Insoluble Geine.	Sulphate of lime.	Phosphate of lime.	Granitic sand.	Specific gravity.
134	Cambridge,	13.0	7.4	2.3	0.4	67.9	1.92
135	Newburyport,	1.5	0.1	3.0	0.5	95.1	2.52
136	Medford,	7.5	5.6	2.6	0.3	84.0	1.92

A substance so rich in geine, or salts of lime and soda, or in both, as the above analyses show, cannot but prove a fertilizer of the soil if spread upon it. If a soil be quite poor, those varieties should probably be chosen that contain the most geine; and this can be judged of by their comparative lightness when dry; the lightest abounding most in organic matter. But if the soil already contain a good deal of inactive vegetable matter, the varieties that abound most in salts will probably be most efficacious; though an additional quantity of geine can do no harm, and may do much good. If marsh mud be applied at random, it is not strange that varieties of it, almost destitute of geine, should be sometimes put upon exhausted soil, and that no good effects should follow. Hence the necessity of some fixed principles to guide the farmer. And since Massachusetts contains so much sea board, and so much land near the coast that may be benefited by this substance, a correct mode of applying it is of great importance.

Depend upon it, that if you do not fulfil what nature intended for your fate, you will be a morbid misanthrope, or an indolent voluptuary—wretched and listless in manhood, repining and joyless in old age.

* In applying Dr. Dana's rules given in the text, to the soils of Massachusetts, I found it necessary to adopt some method of carrying forward several processes together. I accordingly made ten compartments upon a table, each provided with apparatus for filtering and precipitations, also 10 numbered flasks, 10 evaporating dishes, and a piece of sheet iron pierced with ten holes, for receiving the same number of crucibles. I provided, also, a sheet iron oven, with a tin bottom large enough to admit 10 filters, arranged in proper order, and a hole in the top to admit a thermometer. The sand bath was also made large enough for receiving the ten flasks. In this manner I was able to conduct ten processes with almost as great facility as one could have been carried forward in the usual way. *Prof. Hitchcock.*

* Farmer's Register, July 1834, p. 93.

Young Men's Department.

Hints to Young Farmers.—No. 10.

GOOD AND BAD LUCK.

We are in the daily habit of hearing the casualties and misfortunes of life, and particularly in the operations of the farm, ascribed to *bad luck;* and on the contrary, of hearing the blessings, comforts and enjoyments of life imputed to GOOD LUCK—as though these things were casual, and did not depend upon the discreet or indiscreet conduct of those whom they befall.

If we will but scan this matter properly, we shall be convinced, that our good and bad luck most generally comes through our own agency; and that we are in a great measure left to choose our own fortunes in this matter. The faithful practice of known duties with a due restraint upon our baser passions, seldom fails to insure GOOD LUCK;—while indolence, extravagance, the lack of probity and good will to our fellows, are almost the certain precursors of BAD LUCK. And even though our crops may grow, from the exuberant bounty of nature; and although our patrimonial wealth may extort for us the fickle applause and sycopancy of the multitude, the pleasures which they afford are unstable, and are not to be put in comparison with those which result from a course of prudent industry and rectitude of conduct—from a consciousness of having performed, and of performing, the high duties imposed upon us, to our families, to society, and to our Creator.

Let us trace some of the instances of good and bad luck, in the business of the farm, to their palpable causes.

The diligent farmer, who personally superintends his business—who rises before the sun, *sees* that his laborers are at their appointed business, that his farm stock are in condition, his implements and fences in order, and his work timely and properly done, is pretty certain of enjoying a round of *good luck* in all his farming operations. He will have good cattle, good crops, and good profits—and, if he takes care to bring up his sons in the ways of their father, he will have good luck with his family.

On the other hand, look at that man who gossips away a portion of his time at public houses, at political clubs, and among his neighbors—and who trusts the management of his affairs to the discretion and fidelity of others, and ten to one but you find him an heir to *ill luck*;—that his land is annually becoming poorer, his crops lighter, his cattle diminishing, his fences and his buildings dilapidating, his children idle, and perhaps dissipated, and his fortune going to wreck. Who does not see, in such a man, a fountain of *bad luck*.

Our young readers have most of them, perhaps, heard of the *bad luck* that befel the man who neglected, in time, to get a nail in the horse shoe: the shoe came off; the horse became lame, and ultimately died—so that the owner lost his horse for want of a nail. The same *bad luck* attends him who neglects his fences: a rail or a board is down; cattle get in and destroy his crops, and he is obliged to buy bread for his family. The drone too, is generally late with his work—he plants and sows late—and suffers the harvest to waste in the field, before his crops are gathered or housed.

The diligent farmer destroys the weeds that rob his crops, and the bushes that uselessly encumber his grounds: he carefully economises and applies his manures, destined to feed his crops, and keep up the fertility of his soil; and he brings the best portion of it, though naturally wet and unproductive, into a productive state, by a system of judicious draining. All these are certain precursors of *good luck*.

Now mark the farmer of almost inevitable *bad luck* upon that farm down yonder, who, although in the harvest time, is from home, gone to attend a petty law-suit, in which he is a party. Look at the fences, the buildings, the bushes, the weeds, the swamps, the cattle, the crops—at every thing. Do they not all betoken *bad luck?*—and speak in language not to be misunderstood, that the unfortunate master is going *down hill?*

We have one other suggestion, which we may even extend to the fair. Idleness is the parent of tattle—of mischief. Now the man or woman who attend to their own business as they ought, have neither time nor disposition officiously to intermeddle in the domestic concerns of their neighbors—they have no interest in sinking the reputations of others—but would rather raise them to their own level. Their habits, therefore, tend to diffuse *good luck* to all around them.

Chemical Catechism—Chapter IV.

OF WATER.

What is water?

Water is a compound, consisting of hydrogen and oxygen.

In how many states do we find water?

In four: solid, or ice; liquid, or water; vapour, or

steam; and in a state of combination with other bodies.

What is the most simple state of water?

That of ice; because water contains a larger portion of caloric. (*a*)

How do we define vapour?

Vapour is water combined with a still greater quantity of caloric. (*b*)

What are the properties of vapour?

Vapour, owing to the large portion of caloric which is combined with it, takes a gaseous form, acquires great expansive force, (*c*) and a capability of supporting enormous weights; whence it has become a useful and powerful agent for raising minerals of all kinds, and even water itself, from deep pits, and for other very important purposes. (*d*)

In what proportions are oxygen and hydrogen combined to form water?

Water is composed of 88 parts by weight of oxygen, and 12 of hydrogen, in every 100 parts of the fluid.

How is it known that water is a compound substance?

Several methods have been contrived whereby water may be decomposed, and the exact proportion of its constituent parts ascertained.

Do you know any of the methods of decomposing water?

Yes, there are several: it may be done by forcing it through a tube over red-hot charcoal, by passing repeated electrical shocks through it, and also by means of the galvanic apparatus.

Does nature decompose water in any of her operations?

Certainly, by many: particularly by means of every living vegetable; all vegetables having the power of decomposing water, by a secret operation peculiar to themselves. Fish, in general, and all cold-blooded amphibious animals, we have reason to think, are endowed also with the same faculty.

For what purpose are vegetables endowed with this power of decomposing water?

They combine part of its hydrogen, as well as of its oxygen, with the carbon of the atmosphere and of the soil, to form the vegetable compounds, oil, wax, gum, resin, sugar, &c.; while the superfluous oxygen is abundantly evolved by the leaves;

> "Killing infectious damps, and the spent air
> Storing afresh with elemental life." (*e*)

Can you recapitulate what has hitherto been detailed of the nature of oxygen?

Yes: oxygen is the basis of vital air, as well as one of the constituent parts of water; it is the chief support of life and heat; and performs an important part in most of the changes which take place in the mineral, vegetable, and animal kingdoms.

What is hydrogen, the other constituent part of water?

Hydrogen is the base of that gas which was formerly called inflammable air, and is, when in the aeriform state, the lightest of all ponderable things.

Has any method been discovered of composing water by a mixture of oxygen and hydrogen?

Yes: there are several ways of doing this, so that the composition of this fluid is now ascertained beyond all doubt.

Do you know any of the methods which have been employed to form water by a mixture of its constituent parts?

If a mixture of oxygen and hydrogen gases, in proportion, be fired, the inflammation will unite the basis of the two gases, without separating the whole of their caloric, and water will be the product.

Is there any reason to suppose that water is thus formed in any of the great operations of nature?

Yes: it is probable that the torrents of rain which generally accompany thunder storms, may arise from a sudden combustion of hydrogen and oxygen gases.

How is the atmosphere furnished with this hydrogen gas?

Hydrogen is continually emanating from, and is the consequence of, every species of vegetable and animal decay or putrefaction; and it is also evolved from various mines, volcanoes, and other natural sources.

What is the specific gravity of water?

A wine-pint measure of water weighs rather more than one pound; and a cubic foot of water weighs about 1,000 ounces, or 62½ pounds avoirdupois. It is 825 times heavier than atmospheric air.

What change does water undergo in order to be converted into ice?

The atmosphere, when its temperature is sufficiently low, deprives the water of a certain portion of its caloric—crystallization then ensues, and the water solidifies and beomes ice. (*f*)

What do you mean by crystallization?

By crystallization, is understood the concretion of certain substances into regular forms, occasioned by the loss of a portion of their caloric.

To what substances is the term usually applied?

The term is generally applied to compound bodies of the saline kind, and to their separation in regular and peculiar figures, from the water in which they were dissolved.

You have said that ice is the most simple state of water: do you then imagine that water is naturally solid?

Near the poles water is eternally solid: there it is similar to the hardest rocks, and may be formed by the chisel of the statuary, like stone.

Is this great solidity of ice at the poles owing to its being frozen in such large masses?

The great solidity of ice at the poles is occasioned by the very low temperature of the circumambient air; for in very cold countries ice may be ground so fine as to be blown away by the wind, and will still be ice.

Is ice the only instance of water existing in a state of solidity?

No: water becomes still more solid in the composition called mortar and in cements, having parted with more of its caloric in that combination than it does in the act of freezing. (*g*)

What other instances are there of water taking a solid form?

Water is also combined in a state of solidity in many alkaline, earthy, and metallic salts, (*h*) both natural and artificial; and most of these, when deprived of it, lose their transparency and also their crystalline form.

What are the general and more obvious advantages which we derive from water?

Water is a necessary beverage for man and other animals; is perpetually used as a solvent (*i*) for a great variety of solid bodies; acts an important part in conveying nourishment to the vegetable world, and giving salubrity to the atmospherical regions; and lastly, by its accumulation in the ocean, affords a ready communication with distant countries;—the whole of which evidently teaches how provident the great AUTHOR of nature has been in his attentions to to the comforts and conveniences, as well as to the wants, of his numerous creatures.

Beauty has little to do with engaging the love of women. The air, the manner, the tone, the conversation, the something that interests, and something to be proud of—these are the attributes of the man made to be beloved.—*Bulwer.*

(*a*) Ice at 32° must absorb 140° of caloric before it can become fluid; or such a quantity as would raise a body of water of equal bulk with itself from 32° to 172°. This may be very evident to a youth who has been taught the use of a thermometer, by the following direction:

"Take any quantity, by weight, of ice or snow at 32°, and mix it with an equal weight of water heated exactly to 172°. The snow instantly melts and the temperature of the mixture is still only at *thirty-two* degrees. Here the water is cooled 140°, while the temperature of the snow is not increased at all; so that 140° of caloric have disappeared. They must have combined with the snow; but they have only melted it without increasing its temperature. Hence, it follows irresistibly that ice, when converted into water, absorbs and combines with 140° of caloric. Water, then, after being cooled down to 32°, cannot freeze till it has parted with 140° of caloric; and ice, after being heated to 32° (which is the exact freezing point,) cannot melt till it has absorbed 140° more of caloric. This is the cause of the extreme slowness of these operations. There can be no doubt, then, but water owes its fluidity to its latent caloric, and that its caloric of fluidity is 140°.

(*b*) However long we boil water in an open vessel, we cannot make it in the smallest degree, hotter than its boiling point. When arrived at this point, the vapour absorbs the heat and carries it off as fast as it is generated. Yet by continued heat, united with additional compression, both the expansibility and temperature of steam may be greatly increased; and some constructors of steam engines have lately availed themselves of this property, to augment the power and diminish the expense.

Owing to the quantity of caloric that liquids require to convert them into vapour, all evaporation produces cold. It has been remarked before, that an animal might be frozen to death in the midst of summer, by repeatedly sprinkling ether upon him. Its evaporation would shortly carry off the whole of his vital heat. Water thrown on hot bodies acts in the same way; it becomes, in an instant, converted into vapour, and thus deprives these bodies of a great portion of the caloric they contained.

(*c*) The expansive force of steam is found by experiment to be much greater than that of gunpowder. Some volcanic eruptions and earthquakes, it is supposed, owe their terrible effects to this power of steam; the water of the sea finding its way to subterraneous fires. In boiling oil, the workmen are very careful to prevent any water coming near it; for a single drop coming among it would instantly, by the excessive heat of the oil, be converted into vapour, and would force part of the oil over the sides of the boiler.

It is to the expansive force of steam, that the well known motion in wat r, called boiling, is to be ascribed. The vapour is first formed at the bottom of the vessel, and, passing through the water, causes that motion in it which we call ebullition.

(*d*) Steam is now employed in a vast variety of ways in the different manufactories of this kingdom. It is used with much economy of fuel in a great number of dye-houses in various parts of Great-Britain. It should, however, be remembered, that whenever it is intended to heat water by means of steam, the steam must not be thrown in upon its surface, but must be conducted to the *bottom* of the cold liquor before it can be disengaged, or the effect will not be produced, water having but little power of conducting heat *downwards*.

(*e*) When a living vegetable is moistened with water and the sun shines upon it, two very important operations are performed at the same time by the decomposition of the water which the sun's rays enable the plant to effect, viz; the plant is nourished by hydrogen, and the atmosphere is purified by the restoration of its oxygen.

(*f*) Water in freezing crystallizes in filaments, which are uniformly joined at angles of 60 and 120 degrees. The word *crystal* originally signified ice.

It is owing to the *expansion* of water in freezing, that rocks and trees are often split during intense frosts. According to the calculations of the Florentine academies, a spherule, or little globe of water, only one inch in diameter, expands in freezing with a force superior to the resistance of 13½ tons weight. Major Williams also attempted to prevent this expansion; but during the operation the iron plug which stopped the orifice of the bomb-shell containing the freezing water, and which was more than two pounds weight, was projected several hundred feet with great velocity; and in another experiment, the shell burst. The imbecility of man never appears so conspicuous as when he attempts to counteract the operation of laws which were designed by infinite beneficence for his preservation and comfort. The law in question is eminently important, and nature has made it unalterable.

(*g*) Though water takes a solid form in its various combinations, such as with lime, saline crystals, &c. we know of no method of compressing it when in a fluid state. The Florentine academicians filled a globe of gold perfectly full of water, and submitted it to a very powerfull press; but could not perceive that they were able to make it occupy a less space than it did at first. They gave it such a degree of pressure that at length the water exuded through the pores of the metal.

(*h*) If water be thrown on quick-lime, it will be retained by it with such force that nothing less than an intense *red* heat will separate it. In its combination with lime it becomes much more solid than when in the state of ice; which may be proved by direct experiment. Calcined plaster of Paris, in a pulverulent state, becomes quickly solid by mixing it with water. Saussure has proved that alumina, when mixed with water, retains a tenth of its weight of that fluid at a heat which would melt iron.

(*i*) It should be remembered, that all bodies which are soluble in water, form during their solution, a chemical combination with the water, and that solutions in water, are not mechanical mixtures.

Water is not only employed as a solvent for many solid substances, but has important uses in a variety of compounds. Besides imparting solidity to the classes of salts, it gives energy to the action of many of the acids, and is even necessary in their formation. Muriatic acid and nitrous acid gases are condensed so as to form liquid acids, merely by their union with water.

PRICE CURRENT.

ARTICLES.		New-York, July 25.		Boston, July 18.		Philadelphia July 19.		Baltimore July 21.	
Beans, white,	per bush.	1 25	1 30	1 25	1 75	1 00	1 12	1 00	1 25
Beef,	cwt.	7 50	7 75	7 50	7 75	7 00	8 75	7 00	8 00
Bacon, western,	lb.	10		11		14	17	10	13
Butter, fresh,	lb.	18	22	16		9	10	9	10
Cheese,	lb.	7	9	8	13	9	12	10	12
Cotton, best,	lb.	9½	12	9	12	7	9	7	9
Flour, best,	bbl.	6 12½	6 25	7 50	7 75	7 87½	8 00	7 50	7 75
GRAIN—Wheat,	bush.	1 50	1 55			1 37½	1 40	1 55	
Rye,	bush	80	83	85		95	97	65	66
Oats,	bush.	25	37	33	35	35	40		25
Corn,	bush.	28		70	75	66	70	65	68
Hams, pork,	lb.	10	12	11	12	10	13	12½	14
Pork, in log,	cwt.	8 00	8 50	8 00					
SEEDS—Red Clover,	bush.	12 00	13 00	10 00	11 00	10		6 75	7
Timothy,	bush.	2	2 50	2 62½	3 00				
Wool—Saxony, fleece,	lb.	45	50	52	57	48	50	45	50
Merino,	lb.	37	38	48	50	45	50	35	40
1-4 and com.	lb.	32	36	33	35	33	35	23	30
Sheep,	head	39	45	33	37	29	38	35	46
Cows and Calves,									

FROM THE STEAM PRESS OF
PACKARD, VAN BENTHUYSEN & Co.